

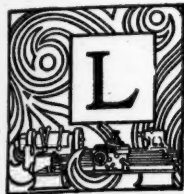
COAL AGE

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Labor, Now and Twenty Years Ago



LABOR now is operating in huge trusts, far larger and more powerful, more all embracing and less easily controllable, than the capitalist interests they oppose. Yet there is one good feature in these trusts; they have prevented a decline in wages, and so saved a distressing fall in prices.

At every halt in the path of progress during the last century, the nation waited in dread until wages fell. We had begun to believe that until wages had dropped industry must continue to decline. When, in the past, the looked-for fall in wages came, values of goods on the shelves dropped heavily, banks broke through the failure of credit, stores were closed and a panic occurred. It was not a healthy condition.

The public prophesied that we would see it again during the present year, but the labor trusts working in the interests of their members saved us from the collapse. Though nearly every newspaper proclaimed lower wages and lower prices they never came.

"Coal Age," firm in the belief that prices were the outcome of wages and that the labor trusts would not permit the reduction of the compensation paid to manual workers, argued that prices must rise rather than fall. They have. The prophesy has been somewhat more fully verified than most of us would wish, but the condition prophesied has arrived and it has restored public confidence and stimulated public buying.

We may congratulate the labor trusts on this performance, but unfortunately they not only steady wages; they tend to raise them and so unsettle values and reduce the value of incorporeal estates. Those who have financed industry have in the last two or three years gained a 6 per cent dividend or less and lost perhaps 40 or 50 per cent per annum in the depreciation of the purchasing power of their money.

This is clearly unjust, and it is undesirable. The general rise in rents is one of the results of the decline in the value of the money. Thus to the labor trusts may be credited avoidance of a panic, but to them

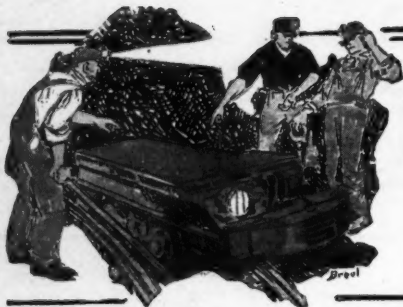
also must be debited that change in money values which makes accident compensation and other insurance inadequate and renders all savings of decreased value. If the labor trust raises wages above the present level it will do the nation much harm. All wages which more than compensate for the change in cost of living or for the increase in productivity should be condemned.

LABOR trusts have repeatedly claimed that their existence was necessary if they were to meet capital on an even ground because as capital had already combined labor must unite also. This is the well recognized argument in favor of the "collective bargain."

One would expect that the employees of the industries where the employers were organized would most need the collective principle and would have strong unions. However, this is not so. Where the employers are combined, the men are unorganized and where the employees are unorganized, the employers are combined. If the defense of the "collective bargain" is needed, those that need it most have it least.

In coal circles the union was the first agency to bring coal operators together. Attacked by the union as a group and urged by the mine workers to sign up as a group, they have combined on the question of wages just so far as they have been compelled by the union to combine. Those who could resist union pressure have remained out. The union has unionized the operators. In fact, the operators have repeatedly resisted this forced combination.

A reporter, who wore out his heels at the conference room of the mine workers and operators in the McAlpin hotel, came back with one predominating impression, saying, that a big burly mine leader fidgetily strode back and forth repeating confidentially to whoever would listen: "They are unionizing the operators. Till we can get the bosses to agree and combine we cannot make a contract. We have unionized ourselves, now we find we must unionize those we would deal with." It is the same today. There are many operators but only one union.



IDEAS AND SUGGESTIONS

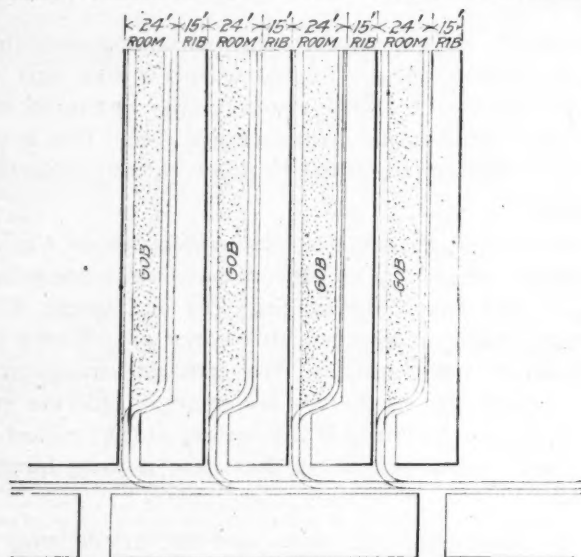
PRACTICAL SCHEMES THAT MAKE THE DAY'S WORK EASIER

Conservation of Coal

BY JOHN A. MORRISON
Monongahela City, Penn.

It is well known that not enough coal is extracted in certain districts, although different forms of mining have been tried. After experimenting with various methods, we still find quite a loss, and it is time to look further for a solution.

One cause for loss in recovery arises from the length of time it takes to drive rooms their allotted distance



THIS METHOD OF WORKING RESULTS IN GREATER RECOVERY OF COAL

and extract the pillars. In certain districts the miners' agreement calls for two rooms for each two men, with the understanding that they will clean up one place before starting in the next, but in many instances the work has been so manipulated by the miner (either on account of not agreeing with his buddy or for some other reason) that one man now works one room. This results in each man losing considerable time. Often a man will clean up about 9 or 10 o'clock and then go home for the rest of the day. This happens on each cut loaded out, or possibly twice a week. The result is that where rooms are driven, say 24 ft. wide, about 10 ft. are extracted each week, or it requires six months to complete a room 250 ft. long. Thus before the rib is drawn out the place caves, causing loss of coal, and a squeeze is brought on with its enormous cost and extreme danger.

This length of time could be almost cut in half by the following arrangement, and still afford the loader a place to work in: As the room entries are advanced, the necks of the rooms could be driven to the point ready for widening out; then, when the time comes to drive rooms, a double track may be put in each room so that two men can work in the same room and load two cars instead of

one. The gob may be thrown into the center, and as soon as the room is driven its proper distance one of the tracks can be taken up while the other is left for the extraction of the rib.

Under this arrangement the miner could not complain of having too far to shovel coal, nor could the mine official growl about too much open territory. The same number of men would be placed in half the number of places, and these could be driven up in half the time. The only difficult point to be taken care of would be the cutting of the places. This would mean giving the machine runner enough loaders so that he could just keep them in coal. The machine would be taken in the room over one track and brought out over the other. The cost for laying the extra switch and providing the second track will be small, and the benefit gained will be gratifying. The accompanying illustration makes the method more clear.

Handy Cleaning Spray

BY CHARLES H. WILLEY
Concord, N. H.

The accompany illustration shows a handy way in which to spray a cleaning mixture of sal soda and lye or kerosene on the parts of mine machinery just before



SUGGESTION FOR AN EASILY MADE SPRAY

overhauling. I use this device at frequent intervals to keep things clean. It is easy to use and is a great improvement over mopping the dirty or greasy parts with a saturated bunch of waste. The spray is easily made from some short lengths of $\frac{1}{4}$ and $\frac{3}{8}$ -in. pipe and a bit of brass strap or plate.

An Outdoor Substation for Supplying Power to a Coal Mine

BY H. W. YOUNG
Chicago, Ill.

The use of the high-tension outdoor substations for supplying power to coal mines is becoming more general. Therefore, a short description of a recent 2500-kv.a.-three-phase installation will be of interest to coal-mine people.

Fig. 1 shows the substation proper. It consists of an

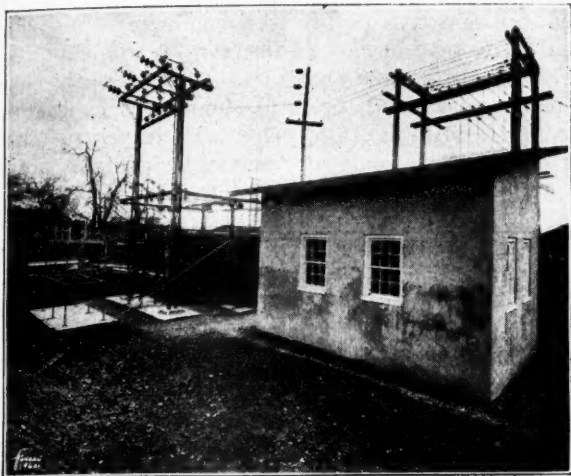


FIG. 1. OUTSIDE VIEW OF SUBSTATION

expanded steel structure on top of which is installed a double-throw, 200-amp., 13,200-volt, three-pole air-brake switch arranged to connect the transformers with either of two incoming three-phase lines. This switch is of a manually operated, inter-locked, remote-control type, permitting all three poles to be simultaneously

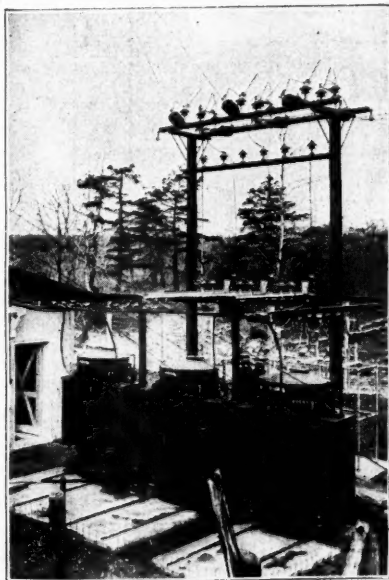


FIG. 2. VIEW OF TRANSFORMING EQUIPMENT

opened and closed from the ground level by means of a locking-type handle.

The three 833-kv.a. single-phase transformers are located on concrete foundations directly under the steel rack, attached to the main steel poles. The transformers are so located that in case of trouble any unit can be quickly removed. Just above the transformers is a steel

framework carrying choke coils, fuses and disconnecting switches for the lightning arresters mounted on a separate pipe-frame structure. These arresters are of the high-speed, sphere-gap, graded-resistance type, which do not require regular attendance.

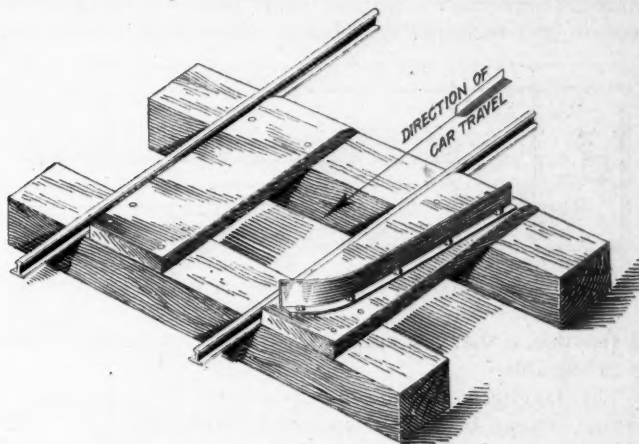
Referring to Fig. 2, it will be seen that a primary metering equipment is mounted between the two main steel poles. At the left is a house in which is mounted the distribution switch-board equipped with oil switches and the necessary measuring instruments. This substation was designed and built by the Delta-Star Electric Co. of Chicago, Illinois.

An Automatic Rerail

BY RALPH W. MAYER
California, Penn.

Many types of rerailing devices are used in American coal mines. The one here described and illustrated consists merely of a means for raising a derailed car to the level of the track and crowding the wheels over onto the rails.

A piece of heavy plank about 2 ft. wide and 6 ft. long is covered with sheet iron and placed on the outside of the rail, its inner edge being in contact with and at the



RERAILING DEVICE IN POSITION

same height as the top of the rail. Extending diagonally across the surface of this steel-covered planking a heavy angle iron is placed. This may, if desired, be slightly bent or L-shaped.

On the corresponding side of the opposite rail a similar steel-covered plank is placed. A suitable space is here left, however, to accommodate the flange of the wheel. The operation of this device is so self-evident as to require no explanation.

SALESMAN'S DUTY TO EMPLOYER—An agent engaged to negotiate sales is under obligation to use the utmost good faith toward his employer, and will forfeit right to compensation for his services where he has assisted in diverting the patronage of his employer's customer to a competitor for his own benefit by securing a prospectively better position with the competitor than he has with his old employer. The fact that an old customer may have become dissatisfied with products furnished him will not excuse the seller's salesman in diverting his trade to a competitor; it is the salesman's duty to report the dissatisfaction to his employer and attempt to remove the cause of it and thereby hold the customer's trade. (New York Supreme Court, Appellate Division; *McCaskey vs. Cumberland Glass Manufacturing Co.*; 176 New York Supplement, 798.)

Mine Electric Signaling Practice*

BY TERRELL CROFT
St. Louis, Mo.

SYNOPSIS—*Mine signaling systems are of several varieties and may be either visual, audible or telephonic, battery magneto or power-actuated. Some types require carefully insulated, lead covered or even armored cable, while others employ bare wire. Switches are important as the ordinary push buttons used in residences and industrial plants are not suited to rough usage.*

ELECTRIC mine signaling systems may, with reference to their sources of energy, be divided into three different classes: (a) Battery, (b) magneto and (c) power. A battery signaling system may utilize either primary or secondary cells. If primary cells are employed, they must be renewed or replaced frequently. Storage cells require constant attention and recharging. Hence, where such application

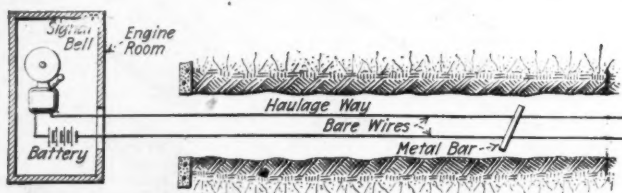


FIG. 1. SIGNALING SYSTEM FOR A HAULAGEWAY

is feasible, either a magneto or a power-actuated system is preferable.

The magneto signaling system uses a magneto-generator, driven by a hand-operated crank, similar to that used in a telephone, at each station from which a signal is to be transmitted. To transmit the signal, the crank is so turned as to produce the right number of long and short rings in the proper sequence. The bells which receive the signals are of the polarized type and are similar to those used in telephones. Both the magneto-generators and the polarized ringers as designed for mine application are specially constructed to withstand severe service and are contained in waterproof cast-iron casings. The magnetos and ringers are relatively expensive, but the system is quite reliable and satisfactory.

Power-actuated signal circuits feed from either the alternating- or direct-current power lines on the property. The pressure for the signal circuit should be reduced so that it does not, in gaseous mines, exceed 10 to 25 volts. With alternating current this is accomplished readily with a "bell-ringing transformer." In nongaseous mines, pressures up to 125 volts may be used advantageously. The Holstzer-Cabot Co., of Boston, Mass., manufactures polarized loud-ringing type bells of 300 ohms resistance which will operate satisfactorily on 50- or 60-cycle, 110-volt, alternating-current circuits.

Wire for signaling circuits should have rubber insula-

tion. Twisted-pair conductor such as that used by the telephone companies can sometimes be employed to advantage. It is particularly adaptable for telephone circuits in that, with it, the transpositions (which are necessary where power circuits are adjacent) are provided by the "twists" in the conductor. In shafts, signal wires may be carried in wrought-iron conduit. In entries and tunnels, signal wires should be held on porcelain or glass insulators and should not be permitted to contact with anything else. Underground insulation is difficult to maintain, particularly in wet mines.

Signal wiring, even though it operates at low voltage, should be carefully insulated. The following, which also applies to lighting wiring, is Rule 23 from the Bureau of Standards "Standardization of Electrical Practice in Mines": "Small wires for lighting or signal circuits shall either be conveyed in pipes or casings, or they may be suspended from porcelain or glass insulators or securely tied to them, so that they do not touch any timbering, rock, coal or metal. On no account shall staples be used. If metallic pipes are used, they must be grounded, and if not electrically continuous, every section must be grounded. If separate uncased wires are used, they shall be kept at least 3 in. apart, and not brought together, except at lamps or fittings."

Battery hoisting-signal systems are shown in Fig. 2.

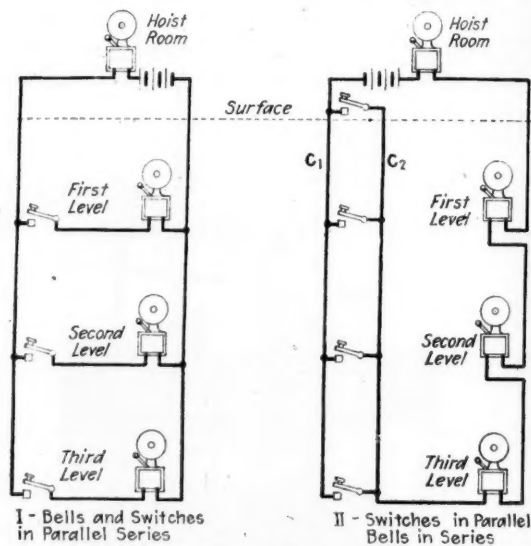


FIG. 2. MINE HOIST SIGNAL CIRCUITS

The circuit of Fig. 2—I should not be used because with it two persons may endeavor to signal simultaneously at different levels and thereby cause confusion and possibly an accident. A circuit arranged as at II, or as in Fig. 3, is preferable, because with them all of the station signals sound when the engine room signal sounds. If deemed desirable, the conductors C_1 and C_2 in Fig. 2 may be bare and carried down the shaft within reach of the cage. Then a man riding on the cage can transmit signals by short-circuiting them with any piece of metal.

The signaling system for a haulage road may consist of two bare conductors held on insulators about 4 or

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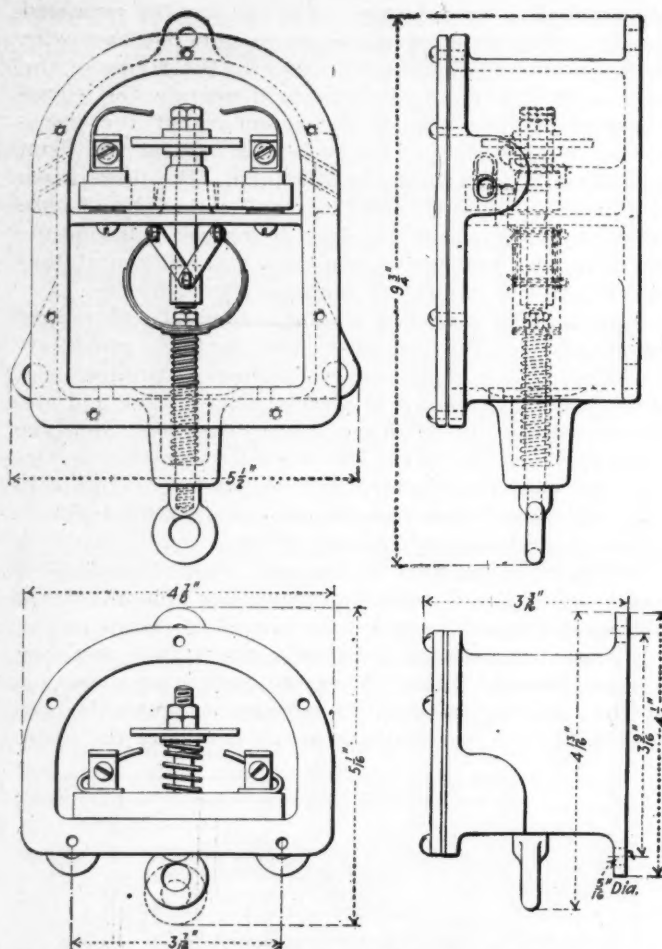


FIG. 6. MINE SIGNAL PULL SWITCHES OF THE HIGH VOLTAGE AND BATTERY CIRCUIT TYPE

desirable only for the largest properties where the number of stations exceeds 15 or 20.

In selecting telephones for mining service, for use above ground (in the engine-room, offices and in the various residences), the stationary wooden, wall or desk type sets should be used unless they are located in exposed positions. Under ground, and in locations above ground which are exposed to the weather, the special mining-type metal-cased telephone should be used. Extension bells may be located at a point distant from any given telephone station and connected so as to ring simultaneously with the bells of that station. For above-ground service, wooden-box extension bells, similar in construction to the box-type telephones, are employed. Under ground and in locations exposed to the weather, iron-box bells having impregnated coils and exposed metal parts galvanized or otherwise protected, should be installed.

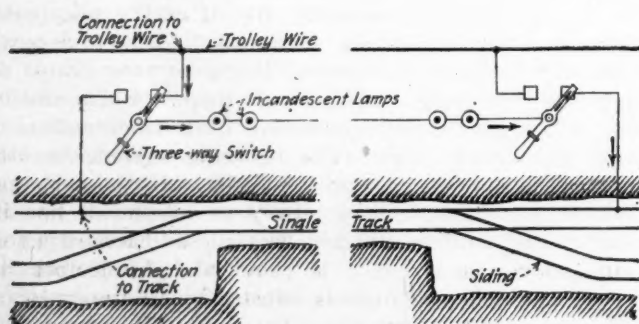


FIG. 7. BLOCK SIGNAL WIRING

Conductors for Telephone Wiring may (according to the Western Electric Co.) be either armored cable, Ferrin circular loom cable, braided weather-proof iron or copper wire, or bare iron wire. Ordinary lead-covered cable when used in mines may give trouble because the sheath is subject to contact with dilute acids. Electrolytic action between the cable sheath and the metal supports is likely. Furthermore, a lead sheath is mechanically weak, which necessitates supporting it at frequent intervals. Jarring of cars or cages has been sufficient to cause crystallization and severing of the lead sheath.

Armored cable is probably the best that can be used for mine service. It is also quite expensive. The construction is this: Three copper conductors are used, each equivalent to one No. 18 B. & S. gage conductor and consisting of three No. 23 gage wires. Over each stranded conductor is placed a $\frac{1}{16}$ -in. wall of rubber over which is placed a layer of tape. Two of these conductors are then twisted together and the third laid beside them, after which a jute filler is put on to make the core of the cable round. Over this core is placed a wrapping of tape, another layer of jute and then the whole is armored with No. 14 BWG galvanized iron wire. Over this armor is then placed another layer of jute, and over all a heavy cotton-braid covering which is saturated with a moisture-resisting and preservative compound. Such a cable would be a little over an inch in diameter, and would weigh approximately 1 1/2 lb. per foot.

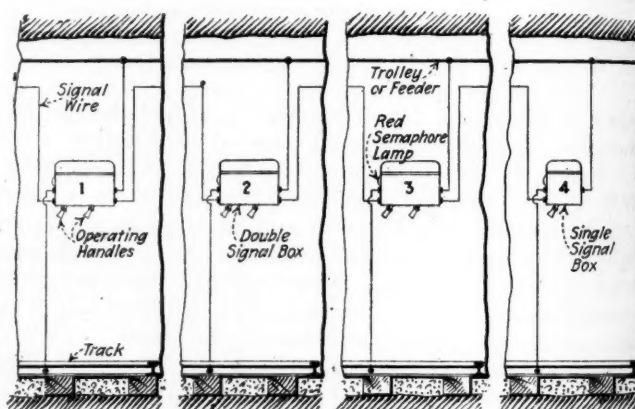


FIG. 8. ON THIS AND THE FACING

Where weather-proof copper or iron wire is used for telephone circuits either two separate wires or a twisted pair can be employed. A twisted-pair installation will cost the least because with it only one insulator is used to support both wires. Where two wires are used, each is supported on its own knob.

Bare galvanized-iron telephone wire, No. 10 BWG, will give satisfaction in a dry mine. Each wire must, of course, be supported on its own porcelain insulator. In splicing, double-tube, tinned-copper sleeves should be used.

Ferrin circular-loom cable is made with any required number of pairs. It is composed of braided, rubber-covered, twisted pair copper conductor having a jute filler saturated with a moisture-proof preservative compound. Over this is placed a serving of impregnated tape and on top of this is woven a circular casing of heavy cotton which is also impregnated with the weather-proof compound. Circular-loom covering differs from ordinary braiding in that the strands are

laid longitudinally and transversely instead of being braided diagonally. This makes a much stronger fabric, as the pull on the cable is resisted by the heavy longitudinal strands. Cable can be furnished with any size conductor, but No. 14 or No. 18 gage is best suited for mine service.

In wiring shafts for telephone service, cables as described above should be used. To protect against falls from the cage, armored cable may be employed. If unarmored cable is utilized, it should be incased in grooved wooden molding, consisting of a base and capping which supports as well as protects the cable. In supporting armored cable, if it is not too long, one clamp at the top is usually sufficient. Conduit or pipe provides a good protection for telephone cable. Support is provided by bending the conduit at intervals of possibly 100 feet.

In installing the cable in a shaft it is bad practice to unreel it from the top. This method permits the total weight of the cable to come upon the conductors before the supports are in place. This condition is liable to cause the wires to break and the cable to part. The best method is to fasten one end in a clamp at the top of the shaft, place the cable reel on the cage and proceed toward the bottom, affixing clamps at the proper intervals. When each clamp is being fastened to its support in the shaft, it should be so placed that there is

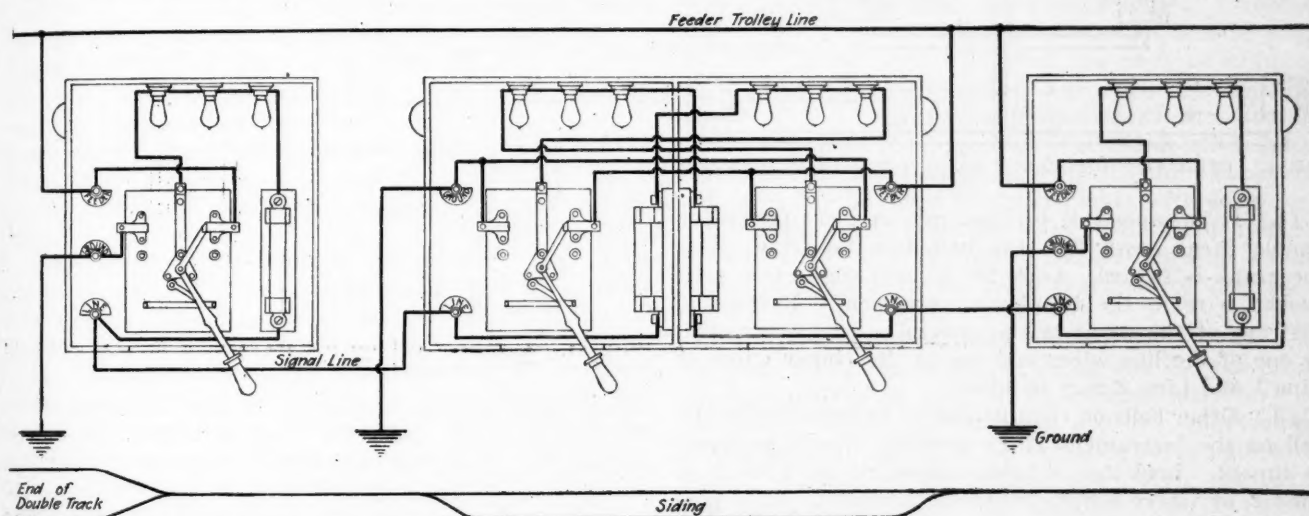
and grounds. This system is not workable where a grounded generator is used to furnish the signaling current.

Protectors are desirable on telephone lines above ground. Where the telephone lines are not liable to interference from power circuits, a protector consisting only of a lightning arrester is satisfactory. But where contact of the telephone with the power circuits is possible, protectors, which employ both fuses to protect against power currents and arresters to protect against lightning, should be employed.

A few telephone troubles and their correction are enumerated below (Western Electric Company):

(a.) It is impossible to ring any one; the generator handle turns hard and the bell does not ring when the crank is turned. When testing to discover the cause of this trouble, the receiver should be left on the hook. First disconnect the two wires which enter the telephone set from the terminals marked "Line 1" and "Line 2," and screw down the connections on the wires coming from the ringer. Then turn the generator. If it turns easily and the bell rings well, the trouble is not in the telephone instrument.

Next connect the line wires again to their respective terminals and disconnect the line wires from the protector, leaving the wires to the telephone set attached



PAGE IS SHOWN METHOD OF WIRING A SERIES OF KEYSTONE BLOCK SIGNALS

a trifle of slack between it and the next succeeding clamp. By proceeding thus, it will be assured that each clamp is supporting its proper length of cable. In carrying telephone cable in roads, entries and tunnels, one good method is to hold the cable to the timbers with porcelain cleats similar to those used in power wiring. Another good method is to tie the cable on glass or porcelain knobs held by spikes or lag screws.

Haulage signal wires may be used for a telephone circuit (Fig. 10). The two bare wires supported over the track, as suggested in Fig. 1, form one side of the telephone circuit and the ground is used for the return. The condensers will not permit the track signaling current to flow through them but will pass the alternating magneto and talking currents of the telephone. When a trip rider short-circuits the signal wires, a relay is operated which in turn causes the signal bell to ring. To insure satisfactory operation of the telephone system, the ground connections must be good and the signal wires must be well insulated; that is, free from leaks

to the protector. Now turn the generator handle. If it turns hard, remove the carbon blocks from the protector and try the generator again. If it now turns easily, clean the carbon blocks by rubbing them together, and brush them off, replace the thin piece of mica between them and put them back into the protector. Now try the generator again, and if it works freely reconnect the line wires to the protector.

If the generator turns freely when the line wires are disconnected at the protector, but turns hard again when the carbons have been cleaned and the line wires again attached, the trouble is either in the wiring between the protector and the main line, on the line, or in the wiring or apparatus at one of the other stations. Look the wiring and line over carefully for a place where one wire touches another, and if you do not find any trouble of this nature, look for a place where the line wires come in contact with a damp timber, the ground or other conducting substance. If the generator still turns hard after the wires have been disconnected

Physical Examination Previous to Employment*

BY CHARLES F. WILLIS†
Bisbee, Ariz.

THE physical examination of workmen previous to employment started with an effort to prevent the spread of tuberculosis, for tuberculosis may be detected in its early stages and cured. But it was soon found that many other diseases were detected and saving of lives made possible. The physical examination does not mean the elimination of the unfit—on that basis it would utterly fail—but rather the measuring of a man's physical fitness and placing the man where he can do the best for himself, his fellow worker and the company. Industry as a whole cannot expect to live up to the standard of physical examination set for the army, nor should it expect to do so, for in all branches of industry, there are types of work that do not require the same amount of endurance as does army work, and the placing of men with physical limitations in the work for which they are capable permits a higher average of physical fitness for the work requiring physical excellence.

The objects of a physical examination are: The early detection of illness, particularly at a time when a full restoration of health is possible; the protection of employees from infection caused by working in contact with contagious diseases; the discovery of a man's physical limitations, in so far as his possibility for rendering good service is concerned; assistance to the safety movement by eliminating association in hazardous occupations with men whose physical condition renders them likely of accident to themselves and others; and the lessening of time lost by sickness. Statistics issued by the United States Department of Labor show that 22.54 per cent. of idleness is caused by sickness, with an average number of 7.71 weeks idle; whereas only 1.66 per cent is caused by accident with an average number of 8.98 weeks lost. Sickness is responsible for almost one-quarter of the economic losses due to unemployment.

The physical examination, however, will not stand as a preventive of illness and accident unless followed by the most minute detail. The army does not merely get fit men into its service but does everything possible to keep them fit, and in industry, unless like care is taken and every effort made to follow the advantages of the physical examination, nothing is gained. The employment of healthy men to do work in unhealthy surroundings is nothing short of criminal.

Many mine managers have recognized for some time the importance of illness-prevention work, but they

have appreciated that illness cannot be prevented by the physical examination alone any more than by improvements in sanitation, sick benefits, free medical advice or any one of the other factors entering into the problem, and that only by the combination of all of these factors can results be secured and benefits obtained.

The time is no longer when a man can act as an independent unit; the appreciation of the interdependence of one man upon another has emphasized the importance of the social unit. Epidemics have made us recognize that even a man's health is not distinctly his own to control as he pleases.

There are so many factors and so many branches that illness-prevention work, offhand, looks to be costly, and statistics have not been available as to its necessity or even its cost to the industry. But the experience of those who have been active in illness-prevention work is that it has paid big dividends in money, satisfaction, continuity of work and contentment. Another reason for the lack of adoption of the physical examination has been the financial unpreparedness of the average

employee to meet the exigencies of sickness, which delays early detection and treatment. While without a doubt this will some day be cared for by the state with some form of insurance, there are many ways of caring for it at the present time, and the mines where physical examination is in vogue do not allow that feature to stand in the way of success.

The Copper Queen Branch of the Phelps Dodge Corporation, operating in Bisbee, Ariz., has had the physical examination as part of its general plan for prevention of illness and accident and the improvement of the physical caliber of its workmen for a number of years. A study of the methods used, their relation to the other activities of the company for the benefit of the workmen, and the results obtained are well worth the time spent, for the methods have been very beneficial to the operators and more so to the employees.

In the early days of the Copper Queen mines, sickness was common, epidemics not infrequent, and accidents an everyday occurrence, with the result that the employees were a heterogeneous gathering of inefficient individuals who appreciated the fact that the company cared little for their well being and who cared little themselves. Soon, however, there was a well-devised plan that not only included better health for the employee, better working conditions, and better living conditions, but also better social and recreational facilities. It included practically everything necessary to make a well-organized, substantial, permanent community. Space will not permit of the details of the whole plan, but only of reference to some of the activities relating to illness prevention, particularly the physical examination. Parts of the plan are common to many companies, but the methods of relating them to the general plan are matters of policy and not so common.

*Paper to be presented at the Chicago meeting of the American Institute of Mining Engineers in September, 1919.

†Consulting Supervisor, Department of Industrial Relations, Phelps Dodge Corporation.

A contract-hospital system is a common factor in nearly all mining communities today, but the ordinary hospital of the mining camp is not aimed so specifically at illness prevention as is the one at the Copper Queen. Its policies are broad; the desire is to be as liberal as possible, not to draw the line closely as to what should be included in the hospital fee. The hospital does not, by many thousands of dollars, support itself by its fees, but the loss is more than made up by the greater satisfaction given the employees and in the knowledge of the officials of the company that the hospital is performing the best service possible and that the doctors are not using their positions to obtain money from the men on various pretexts. As is usual in contract-hospital systems, elective operations are charged for, and occasionally disputes arise as to what constitutes an elective operation. As the object is not merely to cure men but to keep them well, in the Copper Queen hospital any operation that will improve health is ordinarily considered necessary and is performed without extra charge.

The liberality of the hospital policy would not be possible if it were not for the physical examination. It would not be feasible for a company to employ men irrespective of their physical condition and allow all the same hospital privileges. The physical examination becomes to some extent the selection of risks, and because of this selection the very liberal policy is made possible. Without a physical examination, a liberal hospital policy would soon cause a camp to become a gathering place for industrial cripples seeking to be cured. While there is no doubt that there should be such a place, it should be provided by the state rather than by any one organization.

The Copper Queen also maintains a beneficial association for its employees, which is nothing more nor less than a cheap form of insurance against sickness and death outside of work. During 1917, the employees paid into the association \$55,362.82 and the company contributed \$12,600.85. The total benefit payments amounted to \$69,844. This insurance only costs the workmen 1½ per cent. of his daily wage up to a maximum of \$2.19 per month; and in case of death by accident or sickness while off duty, one year's wages are paid the dependents, not exceeding \$1500. In case of the loss of time by accident, one-half wages are paid during disability, not exceeding \$62.50 per month. In case of the loss of a hand or a foot, both hands or both feet, or both eyes, one year's wages are paid, not exceeding \$1500; and in the case of the loss of one eye, one-half year's wages are paid, not exceeding \$750.

PHYSICAL EXAMINATION LEADS TO LOW INSURANCE

The support of the employees' beneficial association comes from the recognition of the Copper Queen officials that the health of the workmen and their continuous employment is worth money to the company. Without a doubt it is worth more to the men themselves, but the company is willing to pay a proportion of the necessary expense, the percentage depending on the number of employees who are members of the association. It is a cheap form of insurance, but if men were taken into this insurance company without an examination as to their fitness, the cost of such insurance would become prohibitive. The physical examination, therefore, makes possible a very low insurance, particularly when the insurance company is run without overhead expense, without the necessity of a large surplus fund, and

with the company paying a considerable percentage of the premiums.

The physical examination was also made a part of the general plan for the improvement of conditions for workmen due to its relation to the safety movement. In no other industry, as in mining, is the safety of a man more interwoven with that of his fellow workmen. For instance, when a hoisting engineer died suddenly from heart failure, three men in the bucket dropped to the bottom of a prospect shaft and were killed. Without a physical examination, men with hernia are likely to be placed where heavy lifting is necessary and the hernia aggravated. Many instances may be related of accidents to others due to a spell of weakness, dizziness, fits, etc., of one man. Bad eyesight also is the cause of many accidents.

In line with the general improvement in health and physical fitness of their employees, the Copper Queen has installed every sanitary convenience that seemed practical. The installation of such devices, however, would mean little if the company were to employ physically unfit men to use them. It has been the desire of the company to build up its mines and its community, and to have its workmen physically the best.

ARGUMENTS AGAINST EXAMINATIONS

Samuel Gompers, president of the American Federation of Labor, is responsible for the following arguments against physical examinations: (1) The apprehension in the minds of the workers that, if their deficiencies are ascertained, they will be discharged and will have to walk the streets in idleness and thus aggravate their situation and condition. (2) The rejection of the unfit, which practically means condemnation and suffering for those depending on him for support. (3) The fact that many applicants for work have been weakened and enfeebled by long periods of unemployment, lack of proper nourishment, etc. (4) That there is a tendency on the part of the companies working in illness prevention to extend their sphere of jurisdiction into the homes. (5) That there is no provision for the care of industrial cripples.

There is no doubt that some of these objections would be tenable if the physical examination were carried out with those objects in view. But the employer who carries out the examination for the purpose of building up a physically perfect working force rather than for the benefit of the employee himself, will ultimately defeat the real purpose and object desired.

Two years later, however, as chairman of the Committee on Labor, Mr. Gompers recommended to Secretary of Labor Wilson that medical examination of applicants be made one of the functions of the government recruiting agency. This recommendation was the outcome of a conference held in New York, July 15, 1918, and embodies the consensus of opinion of ex-physicians and public-health workers. Resolutions stated that it was the sense of the conference that the physical examination of workers is primarily a measure of health conservation, and also is essential to maximum production, a war necessity, in that the purpose of the medical examination is not to eliminate the worker from industrial service, but to adapt him to the work for which he is physically fitted.

The method of carrying out the physical examination by the Copper Queen answers well the arguments against such examinations. The large number of cases that come to the attention of the medical examiner are

not cases of illness that require hospital or sanatorium treatment or necessitate the laying off of the man. Full preservation of the rights of the employees is maintained and the matter of following up the results of the examination by re-examination and treatment is strictly optional with the men. The examination does not increase the authority of the employer over the workman, and, except in a few cases, it has been the desire of the employee to correct and maintain good health.

To secure privacy, the examiner's room is fitted with five private rooms, all of which open directly upon the doctor's room but are not open to each other. The attitude of the examiner is important. Dr. R. B. Durfee, who conducts the examinations of the Copper Queen, emphasizes the fact that the examination is done in order that the workman may have a better knowledge of his own condition. He is told of his condition as the examination progresses, wherein he can help himself, where treatment is necessary, and where changes in his living conditions would improve his health. Many of the men are given information that is invaluable to them.

RECORD OF INSPECTED CASES

During the six months' period, ending June 30, 1918, the medical examiner of the Copper Queen mines examined 2342 men, 88 of whom were rejected. Of these 88, 20 were conditionally passed by the mine superintendent and put to work. Therefore, the rejections amounted to about 30 in 1000, as against several times that number in the army. It can be readily seen that the Copper Queen policy is not the rejection of the physically unfit, but rather the placing of men where they are best fitted and where the safety and health of their fellow employees is not impaired.

Three men were rejected for albumen; this is only in extreme cases, however. A man is usually put to work where conditions warrant treatment and cure. A careful examination is made of the heart, for this has its influence upon safety. A man likely to have heart disease is a menace to his fellow employees and is physically unable to carry on his work. He is likely to become disturbed if engaged in work that is full of quick surprises or excitement; the excitement itself saps his strength, interferes with his own safety and adds to the risk of others. However, only seven men were rejected for this cause. Mining is arduous work and involves much heavy lifting; therefore a careful examination is made for hernia, a serious natural weakness common in every walk of life. Thousands of people have hernia who do not know anything about it until it becomes painfully serious or is pointed out to them. A comparatively simple operation cures the disease in a short time. Out of over 2300 examined, 48 were found to have severe cases of hernia. Practically all of the 20 men conditionally passed by the mine superintendent were men having hernia, which was to be corrected by an operation later. A ruptured person mortgages his vitality and gambles with his life when he lifts heavy loads or even coughs violently, and it is not right that he should be placed in a position where he is liable to injure himself.

It is only in the case of active tuberculosis that rejection is made; in ordinary cases of lung weaknesses men are placed in out-of-door work where the danger of contagion is small and where the likelihood of cure

is large. But seven men were rejected for tuberculosis. Men with this disease in an active stage are unable to do a day's work and, what is more important, they are likely to extend the disease to other workmen when working in a confined place. The detection of weak lungs offers the doctor the opportunity to give men advice as to their methods of living, eating, etc., which will correct their condition.

But six men were turned down because of their eyes. Those with ordinarily poor eyesight are not rejected—practically every case amounts almost to blindness. It is not uncommon to find a man entirely blind in one eye who does not know it. If eye tests had been common in industries in the workman's early life, the sight of the now useless eyes could have been saved in many cases. Occasionally cases of trachoma are found, which call for special care in order to protect other workmen from the contagion of the disease.

The rejection on account of defective hearing is a matter of degree. But two men were turned down for this cause during the six months, both of whom were cases in which there would have been considerable danger to themselves.

It is not uncommon to have men making application for work who have one arm, one leg, or who have not the use of their arms or legs; and while there are occasional positions in which these men might be placed, and it is the policy to do so whenever possible, usually rejection has to be made. But one man was rejected on this account.

Men having venereal diseases in an acute and contagious state are rejected, although there was but one case of this in more than 2300 men examined. The conditions of a mine where men are working in more or less confined quarters permits the spread of such diseases far more readily than in many other industries, and no man desires to be in direct contact with venereal diseases.

DRUG ADDICTS NOT ACCEPTED

Drugs, alcoholism, and morphine were responsible for the rejection of four men. Such men are dangerous to others. Bright's disease accounted for one man, fever for three, measles for one, and teeth for one. Bad teeth lead to indigestion, which in turn clogs the mental and physical powers and makes a person stupid and inefficient. They also send germs in increased quantities to the lungs and heart, tighten joints, and cause rheumatism. Rejection is only in extreme cases, however, for this reason.

It can be seen from the foregoing that the Copper Queen method is by no means the rejection of the unfit, but rather the rejection of those almost totally crippled and those who are a menace to their fellow employees. There can be no question of the advisability of the physical examination, whether it is considered from the humanitarian standpoint, or the selfish cash-conserving standpoint. It adds to the workers' physical comfort, gives them better employment for longer periods, removes as far as possible danger from contagion, and improves conditions in their homes and in the community. By paying attention to physical defects in time, defects that would be overlooked if such physical examinations were not made, hundreds of employees have been refitted for work who would otherwise be jobless because partly incapacitated. Moreover, the health education imbibed by the workers extends to their families.

A Large Coal Mine on the Allegheny River

Although lying close to the river, this mine ships no coal by water. Its output, or most of it, will soon be consumed by a large electrical power plant located close to the mine mouth. Some quite ingenious devices are employed in and about this operation.

BY RALPH W. MAYER
California, Penn.

THE Harwick mine, which is operated by the Equitable Coke Co., is located about 15 miles up the Allegheny River from the business district of Pittsburgh and about 7 miles from the city limits. This operation lies about a mile back from Cheswick, the nearest point on the river. It may be reached from Pittsburgh by trolley car. The Pennsylvania R.R. passes through Cheswick, and the Bessemer & Lake Erie also has a station about a mile from the mine. Spur tracks from both roads run to the tippie and coal may be shipped over either or both.

The output of the mine is about 500,000 tons per year, and 500 men are employed. This is probably the largest operation along the Allegheny, although there are other mines being developed which are ultimately expected to produce a larger tonnage. Practically, no mines along this river have tipples immediately on the river bank, all such buildings being placed some distance back from the stream. Consequently, not much coal is shipped down the river on either barges or steamers, nearly all of it being sent out by rail. The reason for this is obvious. Little backwater exists in the Allegheny for handling barges at a river tippie, and the river itself is shallow and rather swift. A system of locks, such as those existing in the Monongahela River, would easily make the Allegheny as available for navigation as the other stream. Plenty of water also exists for this purpose. As is well known, the Monongahela has a system of locks extending upstream as far as Fairmont, W. Va., making it navigable to this point.

Most of the coal produced at Harwick mine is consumed by the Pittsburgh Railways Co. and the Duquesne Power and Light Co., although some is shipped to the Lakes. The Duquesne company is interested in the Harwick mine, and probably owns it. This firm recently floated \$25,000,000 worth of 6 per cent. gold bonds in New York at par. The money thus realized will be used for the erection of a large electric power plant at Cheswick, and the power produced will be consumed in the Pittsburgh district. The capacity of this plant will be 60,000 kw., while the building will be so constructed as to allow the capacity of the plant to be increased to 120,000 kw. At some future date it is believed this plant may be enlarged to 300,000 kw. The capacity now contemplated—namely, 120,000 kw.—will make this plant as large as the Brunots Island power plant.

Converting the coal into electrical energy practically at the mine's mouth, and conveying this power over wires to the point of consumption, instead of hauling the fuel by rail to some distant power plant or plants, will effect a marked reduction in transportation charges.

The town of Harwick, located at this mine, is owned by the company. It is of considerable size, as mining

towns go, but many of the miners who work in this operation nevertheless live in surrounding towns and cities.

The Freeport bed of coal is the one worked. No overlying slate is encountered, as in the case of the Pittsburgh seam, and the roof is fairly good. A band of bone or sulphur from 6 to 12 in. thick is, however, found in the middle of this coal bed. This is gobbled within the mine. This operation, like most of those lying along the Allegheny River, is gassy, and the coal dust is highly explosive.

Much of the water made in underground operation is utilized within the mine itself, although some has to be pumped from the shaft. That used within the mine is pumped from the wet portions of the workings to the dry and dusty areas, and is there used to sprinkle and dampen the coal dust that accumulates. To accomplish this sprinkling, a system of pipes is run from the drainage pump through the dry portions of the mine. In these, at suitable intervals, holes are drilled over which are placed clamps held in place by suitable U-bolts and provided with pedestals drilled the same size as the hole in the pipe. A suitable piece of gasket rubber is of course placed between the clamp and the pipe. A thread is then cut through the pedestal on the clamp and through the pipe, and a 10-in. nipple screwed through both. This nipple thus has an extremely good bearing which prevents it from being easily broken. A valve upon the outer end of the nipple regulates the flow of water therefrom.

Ventilation for the mine is secured through the use of two exhaust fans. One of these machines only is employed at a time, the other being kept as a spare in case of accident or emergency.

Since all of the coal is shipped by rail, the tippie is equipped only for loading cars. In order to get rid of the sulphur and bone, previously spoken of, it is necessary to pass the coal over picking tables, although all



GENERAL VIEW OF TOWN AND TIPPLE

reasonable attempts are made to free the coal from the objectionable material within the mine.

To this end, the miner who loads too much bone has his attention, as well as that of everyone else, called to it by means of a small piece of cardboard. This is cut the same size and shape as the miner's car check, the same dies being used. The car checks are all hung in a rack, so that the miner can get his checks before entering the mine. Thus far the same practice is here followed that prevails in most mines in this region. The miner who loads dirty coal, however, finds a white cardboard check hung over top of his brass ones with his check number and the word "bony" printed on the white check. This little piece of white cardboard, therefore, shows conspicuously on the board, and everyone knows what it means. Fines and discharges are also used with discretion.

Coal is hoisted from the mine through a three-compartment shaft, one compartment being used for handling men, while the other two are utilized for raising coal. The haulage on the main road is performed by electric locomotives. Gathering is done by horses. These animals are all housed within the mine, their stable being fireproof and having no wood in its construction. The partitions between stalls and elsewhere are of brick and cement, with holes left near the top for ventilation and light. A spacious passageway extends the whole length of the stable in the center. This

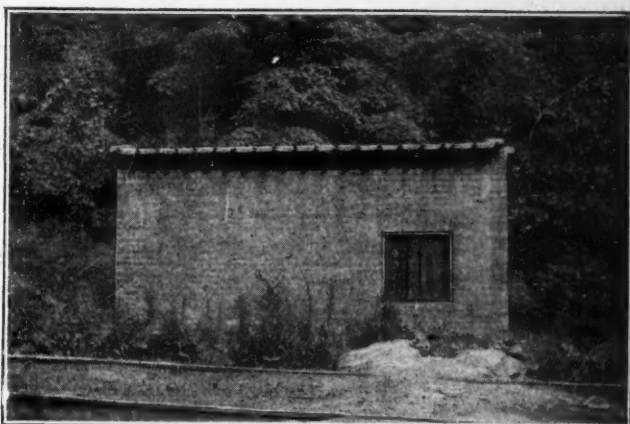


HINGED MINE RAIL IN RAILROAD YARD

affords room for the purpose of cleaning and of gaining access. Upon either side of this is located a row of stalls, the horses facing outward. There is, of course, also a passage between the mangers and the rib, so that feeding may be done therefrom. Steel doors close this underground structure.

Every Saturday afternoon the horses are taken to the top and returned in time for work Monday morning. To facilitate the hoisting and lowering of the animals a special stall or pen is employed. This is made wide enough to accommodate a horse without the animal's flanks touching the sides of the pen. It is provided with a gate or door at either end, while crosspieces over the top prevent the inclosed animal from rearing or leaping out of the stall.

A long iron hook is attached to each corner of the stall, and when hoisting or lowering this is hooked fast to a suitable eye-bolt in the side of the mine cage. These hooks hold the stall in place while it is being raised or lowered. The stall is mounted on four small wheels, each about 4 in. in diameter. These prevent it from



VIEW OF POWDER HOUSE SHOWING ROOF CONSTRUCTION

being easily displaced while on the cage, as well as making it easy to place upon or remove from the cage. Their small diameters render the floor of the stall low, so that the horse can easily walk into it.

The roofs of partings within the mine are timbered with 12 to 15-in. pipe cross-beams strengthened by old steel rails placed within the pipe and wedged against the upper surface thereof. The ends of these pipe beams are supported in hitches cut into the rib or by props with their ends slightly notched.

In this mine the coal is undercut by electric chain machines. It is shot down and loaded out in benches. The first, or "buster," shot is placed in the middle of the room just below the sulphur band. This brings down the lower bench, which is loaded out before the top coal is shot. A hole in each corner of the upper bench brings down the rest of the coal in the room, unless the room is extremely wide.

All blasting is done by shotfirers. These men carry both an Edison electric lamp and a Wolf safety lamp. In addition, each shotfirer carries a shooting cable, a wooden tamping stick, a battery, and the necessary detonators, which are either Monobel No. 5 or Hercules. An ordinary dry-cell battery is employed for firing the shots. When not in use, this is carried upside-down in the shotfirer's pocket in order to keep the exposed terminals of the battery covered. The detonators are carried loose in a canvas bag swung over the man's shoulder.

Each shotfirer collects a small brass check from the miner for every detonator which he uses in shooting that miner's coal. He turns these checks in to the powder house at the end of each shift, and the miner buys his detonator or cap checks, as they are locally called, from the powder man from whom he receives his explosives. Each check is good for one detonator.

The powder house is constructed of brick, cement and old track rails, these being employed only in the roof. The rails are laid across the walls of the building and bricks placed between their flanges, cement being liberally employed to hold them in place. Both ends of the rail extend over the walls of the building and bricks are laid to their extremities, thus forming eaves. A row of bricks at the side of the building also extends out over the wall, one half of the brick only projecting outward. A second layer placed over these bricks and over the top of the rails and bricks already laid prevents the bricks from slipping and tends to hold the whole roof firmly in place. The upper surface of the roof thus formed is liberally covered with cement mortar, thus

forming a water-tight and fireproof roof. The roof of the fanhouse is similarly constructed, except that instead of steel rails, beams are used and flat brick arches formed between them.

Mine props are shipped to this operation in railroad cars and unloaded therefrom to piles beside the railroad track. They are loaded from here directly into the mine cars and hauled to the shaft and lowered while still in the car. This method saves unnecessary handling. A track for the mine cars is laid between railroad tracks and a hinged rail is employed where the mine track crosses the railroad track. Planks or timbers are placed under the mine rail so as to bring its bottom to the same height as the top of the railroad rail. The hinged rail may then be swung into and fastened in place or unfastened and moved out of the way, as desired.

Some of the practices employed underground, while not strikingly extraordinary, are nevertheless worthy of mention. The floors of some of the overcasts are made from used track rails laid about 2 ft. apart crosswise of the entry. Inch boards are then laid between the rails, their ends resting upon the rail flanges. Wire netting is placed above these and over the rails, and cement grout poured over the whole, filling the space between the rails and rendering it airtight. This makes a solid and substantial floor. Brick walls built at both sides of this floor and extending to the roof form the side walls of the overcast. The edges of low hanging or projecting pieces of rock in the roof of entries or passages where persons are likely to travel are given a coat of whitewash or lime, thus rendering them easily visible.

A disastrous explosion occurred in this mine some years ago, caving a part of it. Some pillars still remain in this portion of the operation. This throws unusual weight upon some other parts of the mine now being worked, and the roof caves in some cases before the room is driven to its full length. This necessitates care in timbering and the driving of narrow rooms.

National First-Aid and Mine-Rescue Meet to Be Held in Pittsburgh

Indications are that the proposed National First-Aid and Mine-Rescue Meet to be held in Pittsburgh, Penn., Sept. 30 and Oct. 1, under the auspices of the Bureau of Mines, will witness the greatest gathering of miners ever assembled for such a purpose. Coal and metal-mining teams from all parts of the country have already entered the various contests. So far 68 teams have agreed to participate and more are coming every day.

The first-aid and mine-rescue contest is to be a part of the dedication of the new laboratories of the Bureau of Mines at Pittsburgh. The dedication ceremonies will begin on Sept. 29, to be followed by first-aid and mine-rescue contests of Sept. 30 and Oct. 1.

Many companies have entered as many as three teams in the respective events, and there is a long list of prospective entries. The entries close Sept. 15. It has been decided to limit the national first-aid contest to full-team events. In the place of prizes and competition for one- and two-man events, an additional incentive has been added to the first day's program in that teams are competing not only for place among the first twenty for the final day's program, but also for the championship of their respective states, based on the relative rating received on the first day only. This in no way affects the final day's contests; it simply means the awarding of additional prizes. Thus,

if six teams are entered from Indiana, the team from Indiana receiving the highest rating on the first day will be awarded the championship of the State of Indiana at the national meet. If only one team is entered from the State of Colorado, it will naturally receive the state prize, etc.

Prizes and trophies to be competed for are now being arranged by the prize committee. The following have already been arranged for. (1) New National Safety Council silver cup to winner of national first-aid contest. (2) Silver challenge cup to winner of national mine-rescue contest. Gold medals of the National Safety Council to the winning team members of mine-rescue and first-aid contests respectively. Silver medals of the National Safety Council to the second best team members of mine-rescue and first-aid contests respectively. Bronze medals of the National Safety Council to the third best team members of mine-rescue and first-aid contests respectively. Bronze medals of the American Red Cross to each member of the winning first-aid team.

Prize certificates of the American Red Cross will be awarded to each member of the second and third best first-aid teams. Special prizes will be given to the highest rating teams in the first day's mine-rescue and first-aid contests from each state represented. Banners will be received by each team competing in either the mine-rescue or first-aid contests (provided that only one banner will be given to a team participating in both the first-aid and mine-rescue contests), and souvenir watch fobs to all members of first-aid and mine-rescue teams competing. It is expected that additional prizes will be announced later.

Legal Department

DEALING WITH AGENTS—Plaintiff, in suing to recover on a contract for hauling coal made with an employee of defendant company, had the burden of showing that such employee had apparent authority to make the contract for the company. (St. Louis Court of Appeals, *Johannes vs. Union Fuel Co.*, 199 Southwestern Reporter, 1032.)

VALIDITY OF COMPROMISE AGREEMENT—If on the faith of a misrepresentation by the buyer of coal to the seller that shipments had been rejected by its customers as being of inferior quality and that an inspection showed the complaints to be justified, whereas there had been no rejection or inspection at that time, the seller authorized the buyer to sell to the best advantage and stated that seller would bear any loss, the agreement was not binding on the latter. (St. Louis Court of Appeals, *Haddaway Curd Coal Co. vs. Breese-Trenton Mining Co.*, 200 Southwestern Reporter, 104.)

PENNSYLVANIA SAFETY STATUTE—Under the Pennsylvania statute which provides that all mine machinery from which accident is likely to occur must be fenced off by suitable guard railing, an employer cannot escape liability for injury resulting from violation of the law on the ground that the injured man assumed the risk by reason of knowledge of the dangerous condition. Hence where a mine engineer was injured through defendant's neglect to guard dangerous shafting, he was not deprived of the right to recover damages because he knew of the unguarded condition. Nor is it any defense, in the face of the express statutory requirement, that similar machinery in other mines is commonly left unguarded. (Pennsylvania Supreme Court, *Carley vs. Dexcar Coal Mining Co.*, 105 Atlantic Reporter, 651.)

Appliances in Mining Operations

BY CHESLA C. SHERLOCK
Des Moines, Iowa

At common law it was the duty of the employer to furnish the workman a safe place in which to work and to provide him with reasonably safe tools and appliances with which to carry on his work. This common-law duty has been enlarged and elaborated from time to time by statute, as more progressive methods of performing work have been brought into use.

Because mining operations have been peculiarly hazardous, there has been a great deal of legislation upon the subject, even from the earliest times. While the general rule enjoining employers to furnish a safe place in which to work and safe tools and appliances has been commonly understood as applying to mining operations, we find that almost from the beginning of legislative enactment of laws, special statutes have been exacted looking to a complete and rigid supervision over mining operations and the manner in which they may be conducted.

It is interesting to note that the duty to furnish a safe place in which to work and safe appliances with which to do that work, while apparently extending only to the original transaction, are in fact continuing duties constantly imposed by law upon mine operators. The Federal Court has said, and it carries dozens of other decisions with it, that the mere furnishing of safe tools and appliances does not discharge the mine operator's duty; but that, in a legal sense, it comprises a continuous duty of oversight and inspection to keep them in the condition in which they are required to be originally given.

GREATER LIABILITY OF EMPLOYERS

It is needless to say to mine operators that this is a considerable enlargement of the liability of an employer as it was formerly known. With all the common-law defenses which employers, by patience and skill, had developed, it was practically impossible for the employee of an ordinary employer to recover damages for injuries which he sustained by reason of defective machinery or appliances. It was generally shown that the defective condition of such appliances was known to the workman, hence he could not recover; or else other equally valid showings were made to cut off his recovery.

However true it may have been or may be in other employments, it is not true in mining operations that there is any relaxation of the duty to furnish safe appliances and to keep them so. This means that only the greatest degree of care in the inspection and repair of the appliances will suffice to discharge the mine operator's duty in this respect. Since his duty is one of "continuous oversight and inspection," it can be seen that only a high degree of care and caution will be accepted from him.

In another Federal case, however, it was decided that while a mine operator may be held responsible for injuries incurred by a miner which were brought about by defective appliances, the rule does not apply in cases where the appliances were not owned by the operator and where he was not charged with the duty of furnishing them.

The miner is under no legal obligation to inspect the machinery or appliances before he commences using them or to ascertain whether or not they are safe, ac-

cording to another Federal case. He has a legal right to assume that the machinery and appliances furnished are safe as required by law and that the operator is discharging his duty and is keeping them safe. This is quite a step in advance of some of the decisions formerly handed down by the courts.

Frequently in the past employers were permitted to escape liability where it was shown that the machine or appliance was obviously defective and that this would have been known to a workman of reasonable skill and precision. In such cases, the workman had to bear the loss; but we do not find any such rule obtaining in the case of mining operations. It is apparently impossible for mine operators to invoke it in defense of their shortcomings.

There are, however, many exceptions to the general rule that often work in favor of mine operators. Chief among these is the so-called "simple tool" rule. It is to the effect that no employer owes any duty of inspection to simple tools or appliances, such as are used by workmen every day and which are so simple in their purpose and construction as to be readily understandable to the average person. Among tools which are recognized as belonging to this class are hammers, saws, chisels, mauls, sledges, axes, and countless others which are peculiar to given trades and callings.

In the case of simple tools, no duty devolves upon the employer to offer instruction in their use, or to inspect them, and the workman of mature age and experience has no right to look to his employer for such instruction or inspection.

HELD THAT AX IS A SIMPLE TOOL

In a Kentucky case, involving a coal miner, it was held that an ax is a simple tool, subject to the simple-tool rule, and that an employee who so holds and uses an ax as to receive an injury, where there is no reason why he should so hold or use it, cannot hold his employer responsible for the injury even though the tool is, in fact, defective.

Furnishing safe tools and appliances, in the opinion of the Louisiana court, extends to furnishing appliances of suitable size and strength to carry on the work in hand. If an employer furnishes a machine or appliance which is generally recognized by experts to be insufficient in strength and capacity to carry on the contemplated work, he has not discharged his duty to his workmen and is responsible to any who are injured while working with such machine or appliance.

In an Alabama case, it was held to be the duty of the operator or his foreman to furnish a workman charged with remedying defects all the necessary materials and equipment to effect such a remedy, and to furnish them in such a manner as not to expose the workman to unnecessary peril. It was further held that in case the operator fails to so furnish the proper facilities that the employee is justified in refusing or neglecting to carry out the order, compliance with which would have subjected him to great personal peril.

In connection with this case it is well to call attention to the fact that the employer has no legal right to order an employee to perform a dangerous task, even though it arises in an emergency. Even if there is some doubt as to the danger to the employee, the employer has no right to require by order a compliance from his employee unless he has furnished him with the proper equipment and facilities, for carrying out the order.

There has been some contention as to just what is necessary on the part of the employer to bring about a compliance with the law in furnishing safe tools and appliances, especially in the case of simple tools. It has long been held that where the employer purchases simple tools of a reputable dealer, made by a reputable manufacturer, he discharged this duty to his employees.

But the modern tendency, as pointed out by a Missouri decision, is to the effect that the mere purchase of a reputable manufactured article, even though it falls in the class of simple tools, is not sufficient to discharge the liability to furnish safe tools and appliances. In the Missouri case a bucket used in hoisting dirt, which held three-quarters of a ton, and which was hoisted over the heads of workmen, was the appliance in question. The court said that the employer's duty had not been discharged by its mere purchase from a reputable dealer, inferring that a careful inspection after purchase and before use was also necessary.

The decision draws a distinction which it is well to note and which perhaps explains the ruling in a better light. The court said that the duty of inspection is owed to employees in cases where the simple tool is to be used in hazardous work, and that in the absence of such inspection reliance on the fact that the bucket was purchased from a reputable dealer not being sufficient, the operator must be responsible for the injury occasioned a workman by its defective condition.

Of course, it is generally recognized that this duty of inspection is not owing in cases where the simple tool is not to be used in hazardous work. In one case, which I recall distinctly, an employer had purchased a number of hammers and chisels, placed them in his stockroom, and from that place issued them to his workmen. There was no inspection of these tools after purchase or before they were issued, and the court said that there was no duty on the part of the employer to so inspect them, for they were not to be used in hazardous work.

In a Federal case, in which the duty to furnish safe tools and appliances was again stated, it was held that the duty, which extended to a coal-mine operator, was a duty which could not be delegated to a servant or other person so as to exempt the employer from liability in case of omission; that is, the duty is nondelegable.

All of these instances, with the exception of one, are cases arising out of coal-mining operations. The one exception arose out of mineral-mining work, but is recognized as applying to coal-mining as well.

Dedication of Bureau of Mines Building

BY D. J. BAKER

One of the entertainment features arranged for the dedication of the Bureau of Mines building at Pittsburgh during September will be the presentation of a pageant at Forbes Field showing the growth of the coal industry from the Age of Bronze to the present time. The work is under the direction of Thomas Wood Stevens, president of the American Pageant Association, who is the author of the production. Mr. Stevens acquired a national reputation during the war as author and director of the National Red Cross Pageant and the Joan of Arc Pageant presented at Pittsburgh and at Domrémy, France, by the American Expeditionary Forces. He will also be recalled as State Director of the masque of the Massachusetts Institute of Technology. Mr. Stevens is an engineering-school graduate and

quite familiar with coal-mining methods. As a result the coming spectacle, the first of its kind with the coal industry as a theme, promises to surpass anything ever before attempted in the line of educational amusement. An experienced force of 30 people from the School of Design of the Carnegie Institute of Technology are at present coöperating with Mr. Stevens in the writing of the book and arranging for the stage settings. The cast will be drawn largely from students at the University of Pittsburgh, Carnegie Tech and men coming to Pittsburgh to take part in the first-aid and mine rescue meet. The finished book will contain parts for twenty speakers, many dancers and hundreds of other performers.

In the prologue, the Earth's Spirit is represented as concealing her riches for which the Spirit of Science is searching. The Bronze Age, the primitive period of mining, when the art of mineral extraction was practiced by the magician, necromancer and medicine-man, is next portrayed. It serves to introduce the first episode. Under the guiding hand of Science, a magician is represented as practicing his ancient methods.

The second episode of a Gold Age shows the strides made by the Spirit of Science against the Spirit of the Earth and serves as a background for scenes of Oriental splendor. The third episode portrays the advance made in mining during the Iron Age which is assumed to run to the 15th century. The age of chivalry acts as the background for this period.

The fourth and last episode is represented by the Coal Age and is the largest of all four in point of elaboration. All the different operations involved in present-day mining methods are shown. The daily lives of the miners are portrayed in the mines and around their homes. Spectacles of dramatic interest are unfolded.

It is planned to enact a miniature, imitation coal-dust explosion in which excited wives rush to the mouth of the mine as first-aid and mine-rescue teams prepare to enter. The central theme throughout presses home the conviction that the Spirit of the Earth, which rebels against giving up her treasures has not yet been completely conquered by the Spirit of Science.

The program will be as follows.

MONDAY, SEPT. 29

- 8:30 a.m.—Bureau building open for inspection.
- 10:30 a.m.—Dedicatory ceremonies in rear of main building, 4800 Forbes St.
- 2:00 p.m.—Special train and automobiles to experimental mine near Bruceton, Penn.
- 3:00 to 6:00 p.m.—Mine explosion and inspection of experimental mine and explosives testing plant near Bruceton, Penn.
- 6:00 p.m.—Return by special train and automobiles to Baltimore & Ohio R.R. Depot, Pittsburgh.
- 8:00 p.m.—Informal reception and organ recital, Carnegie Music Hall. Arranged by Carnegie Institute of Technology.

TUESDAY, SEPT. 30

Nation-wide first-aid and mine-rescue contest. Forbes Field, Pittsburgh.

- 9:00 to 12:00 a.m.—Mine-rescue elimination contests.
- 2:00 to 5:00 p.m.—First-aid elimination contests.
- 5:00 p.m.—Coal-dust explosion.
- 8:00 p.m.—Pageant glorifying the mining industry. Forbes Field.

WEDNESDAY, OCT. 1

- 9:00 to 12:00 a.m.—Mine-rescue final contest.
- 2:00 to 5:00 p.m.—First-aid final contest.
- 5:00 p.m.—Coal-dust explosion.
- 8:00 p.m.—Smoker with award of prizes to winning teams.



WHAT THE ENGINEERING SOCIETIES ARE DOING

Engineering Societies Pay Tribute to Carnegie

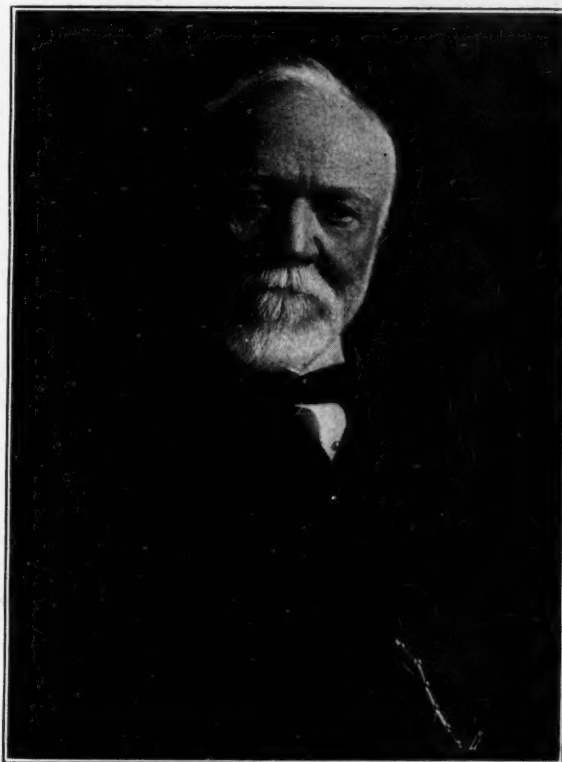
A meeting of representatives of the large national engineering societies was held on Monday afternoon of this week at the Engineering Societies' Building, New York, to take action on the death of Andrew Carnegie. It was informal in character, owing to the short time available for calling together those who represented the engineering societies which have been benefited by the generosity of Mr. Carnegie. It was called thus soon after the death of the great ironmaster, however, in order that prompt steps might be taken to give expression to the deep regret of the engineering professions and to their tribute. It was voted at the meeting that the following representatives of the founder societies of the United Engineering Society and the Engineers' Club be requested to attend in a body the general memorial service which has been proposed: For the founder societies the presidents and secretaries; for the United Engineering Society, the president and former trustees; for the Engineers' Club, the president, board of directors and past-presidents. Furthermore, a committee was appointed with Charles F. Rand as chairman to draft suitable resolutions to be spread on the record of the bodies represented and sent to the family of Mr. Carnegie.

It was also voted that the chairman appoint four men to serve with himself as a committee to determine whether there should be a memorial to Mr. Carnegie by the Engineering Societies and, if so, what form it should take, the committee to have power to make the necessary arrangements and carry them through. The members of this committee are Charles F. Rand, Lansing C. Holden, W. L. Saunders, J. A. Bense and Prof. Comfort A. Adams.

The Engineering Societies' Building, at 29 West Thirty-ninth Street, New York City, and the home of the Engineers' Club, adjoining it in the rear and fronting on West Fortieth Street, which were made possible by the present of Mr. Carnegie, are shown in the illustration on page 322. A plan for a home for the engineering societies was submitted to Mr. Carnegie

in 1895 by W. D. Weaver, former editor of the *Electrical World*. Others made similar suggestions later. It was in 1903 that Mr. Carnegie offered to give \$1,000,000 for a suitable union building for all of the societies. A year later, after it was found that a larger sum would be needed to make adequate provision for their comfort, Mr. Carnegie increased the gift to \$1,500,000 for the joint benefit of the American Institute of Electrical Engineers, the American Society of Mechanical Engineers, the American Institute of Mining

Engineers and the Engineers' Club. The only limitation was that the money should be devoted to the erection of a building, the societies buying the land. A conference committee representing the various societies, after considering the requirements and objects of the Engineering Societies' Building and the Engineers' Club respectively, allotted the sum. To the Engineering Societies' Building \$1,050,000 was given and to the Engineers' Club \$450,000. On May 8, 1906, the cornerstone of the fine building was laid by Mrs. Carnegie. Although not entirely finished, the building was ready for use on Jan. 1, 1907. A large bronze tablet near the main entrance to the building bears a portrait of Mr. Carnegie and the words of his brief letter giving the \$1,500,000. Another bronze tablet announces that the land was given by members and friends of the



ANDREW CARNEGIE

three founder societies. A bronze bust of Mr. Carnegie in the library, was presented by officers of these three associations. By the recent construction of additional stories on the building, quarters were provided for the American Society of Civil Engineers. A number of other societies closely affiliated in membership and service with the national engineering organizations also have homes in the building.

Andrew Carnegie, philanthropist and steel manufacturer, died on Aug. 11, in his eighty-fourth year. He had been in his time bobbin-boy, stoker, bill clerk, messenger boy, telegraph operator, railroad superintendent and steel magnate. In every place that he filled he showed that the work could be successfully accomplished with a cheerful humanity such as, so many of us believe, little comports with being a "hard-headed business man."

A. I. M. E. Has Large Fuel Program

As if to meet the objections of those who do not like the word "Metallurgical" in the name of the American Institute of Mining and Metallurgical Engineers that institution has prepared a coal program for its meet in Chicago, Sept. 22 to 26, which far distances any other attempt in that direction.

Among the papers to be presented are the following: "Height of the Gas Cap in the Safety Lamp," by C. M. Young; "Engineering Features of Large Modern Coal Mines in Illinois and Indiana," by C. A. Herbert and C. M. Young; "Gas Producer Practice," by G. S. Brooks and C. C. Nitchie; "Testing of Coals for Byproduct Coking and Gas Manufacture," by Horace C. Porter; "Coals of Ohio and Their Limitations for Byproduct Coke," by Wilbur Stout; "Outdoor Substation in Connection with Coal-Mining Installation," by H. M. Young; "Low Temperature Carbonization of Coals," by S. W. Parr; these will all be presented for discussion in the afternoon of Sept. 22. On the evening of the next day the following papers will be read on a competing industry, that of oil: "The Irvine Oil District, Kentucky," by Stuart St. Clair; "Petroliferous Provinces," by E. G. Woodruff; "Investigations Concerning Oil Water Emulsions," by A. W. McCoy, H. R. Shidel and E. A. Trager; "Essential Factors in the Valuation of Oil Properties," by Carl H. Beal; "Application of Law of Equal Expectations and Its Application to Oil Production in California," by Carl H. Beal and E. D. Nolan; "Value of American Oil Shales," by Charles Baskerville.

On the morning of the next day, Wednesday, will be held an interesting symposium on sulphur which will upset many old-fashioned theories and disclose many facts about sulphur not yet known. It reveals sulphur not as an alien in coal but as an original incorporator of the coal substance and it shows that sulphur has only exercised its right of self determination and separated itself from the carbonaceous material of which it formed at one time an important organic part. The articles are entitled: "Geographic Distribution of Sulphur in the West Virginia Coal Beds," by I. C. White; "Occurrence and Origin of Finely Disseminated Sulphur Compounds in Coal," by Rheinhardt Thiessen; "Mechanical Separation of Sulphur Minerals from Coal," by J. R. Campbell; "Sulphur in Coal—Geological Aspects," by George H. Ashley; "The Forms in Which Sulphur Occurs in Coal," by A. R. Powell; "Effect of Sulphur in Coal Used in the Ceramic Industries," by

C. W. Parmelee. And there will be yet another sulphur-in-coal session in the afternoon of the same day, Wednesday, Sept. 24, when the following interesting papers will be open for discussion; "Removal of Sulphur from Illuminating Gas," by W. W. Odell and W. A. Dunkley; "Low Sulphur in Coal," by H. M. and T. M. Chance; "Low Sulphur Coal in Kentucky," by Willard R. Jillson; "Low Sulphur Coal in Illinois," by Gilbert H. Cady; "Sulphur in the Coking Process," by S. W. Parr; "Commercial Recovery of Pyrite from Coal," by S. H. Davis; "Sulphur in Producer Gas," by Frederick Crabtree and A. R. Powell. As has been said the meeting opens at the Congress Hotel, Chicago, Ill., Monday, Sept. 22, the day being occupied in technical discussions. In the evening there will be a smoker at the Chicago University Club. The next day the institute will go by steamer to the Gary Steel Plant of the United States Steel Corporation where lunch will be served. Wednesday is devoted to technical sessions. On Thursday a trip will be made to LaSalle where the guests will be entertained by the Illinois Valley Manufacturers' Club and the local Chamber of Commerce. From the standpoint of scenery, geology, mining and industry, the itinerary of the trip to LaSalle, Ill., cannot be surpassed. The committee has arranged all details with a view to the convenience of the visitors and will furnish the guests automobiles, luncheon and guidance.

Judging by the scenery in the vicinity of LaSalle, the appellation "Prairie State" for Illinois, is a misnomer. The

scenic beauty of the country rivals that of the Appalachian region. Deep ravines abound, and large rocky bluffs are evidences that Illinois is not without its bolder topographic features. Starved Rock and Deep Park have, for many years, been the Mecca of tourists and in addition the district is one rich in tradition and in historic lore. Furthermore the important LaSalle anticline may be readily studied.

Longwall mining is the predominant type of coal operation at LaSalle. The room-and-pillar method, however, may be studied at the mines of one of the companies, as may also the manner of operation by a modified panel system.

On Thursday evening there will be optional trips to Franklin and to Macoupin Counties, the whole of Friday being spent at the mines. Many of the members will journey from the institute meeting to the dedication of the Bureau of Mines Experiment Station where an interesting program is provided. Carl Scholz is the chairman of the committee of arrangements of the institute.



HOME OF A. I. M. E. ENGINEERING SOCIETIES' BUILDING—GIFT OF ANDREW CARNEGIE

Views Taken During the Rocky Mountain Institute Trip

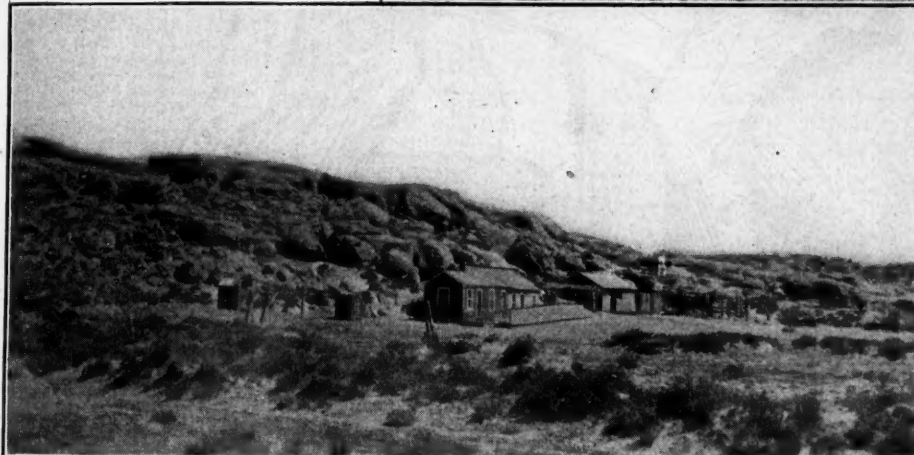
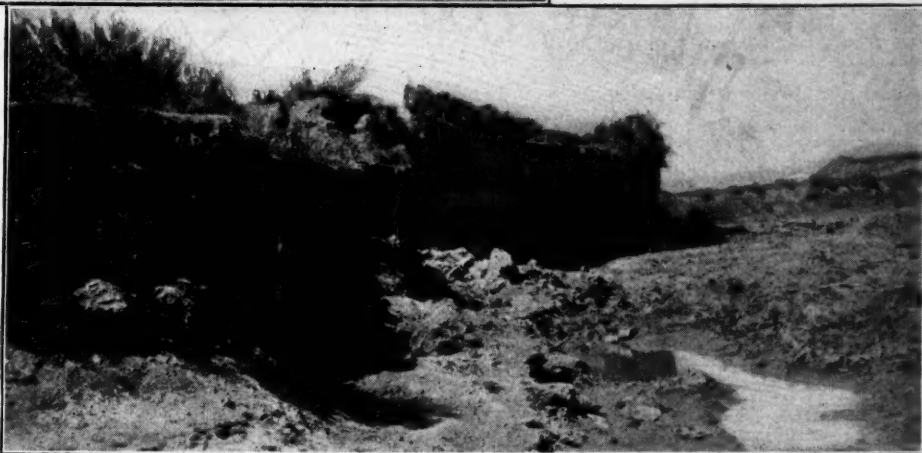


Winton McGeath Post Office Wyoming

The town of Winton is located in a country made barren by lack of water and hence it has a bare appearance, but to those accustomed to a country, tonsured and close shaven, Winton is an attractive village of sociable people with a high standard of living.

How a Southern Wyoming Creek Bed Looks

View taken on the creek, or arroyo, between Winton and Rock Springs. The valleys are covered with "loess" (pronounced "lurse") a partially cemented deposit of airborne particles. Streams cut marvelous meanders into the soft material.

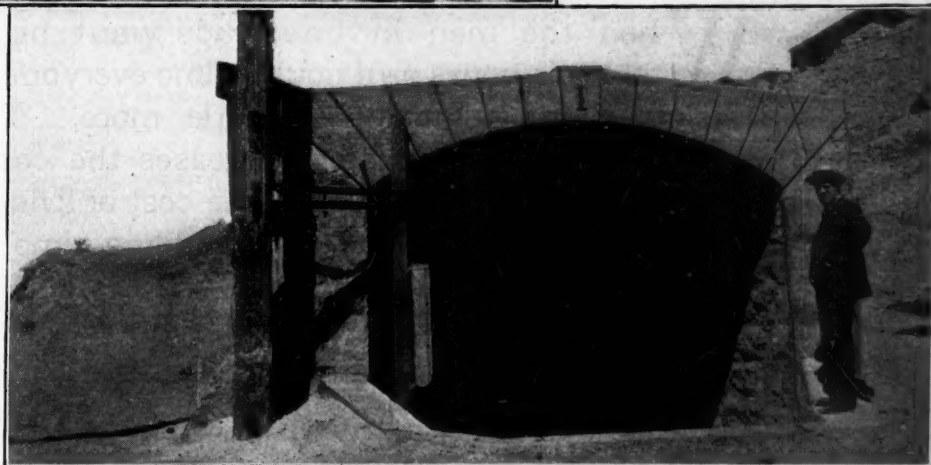


Typical Rocks of Mesa Verde Formation

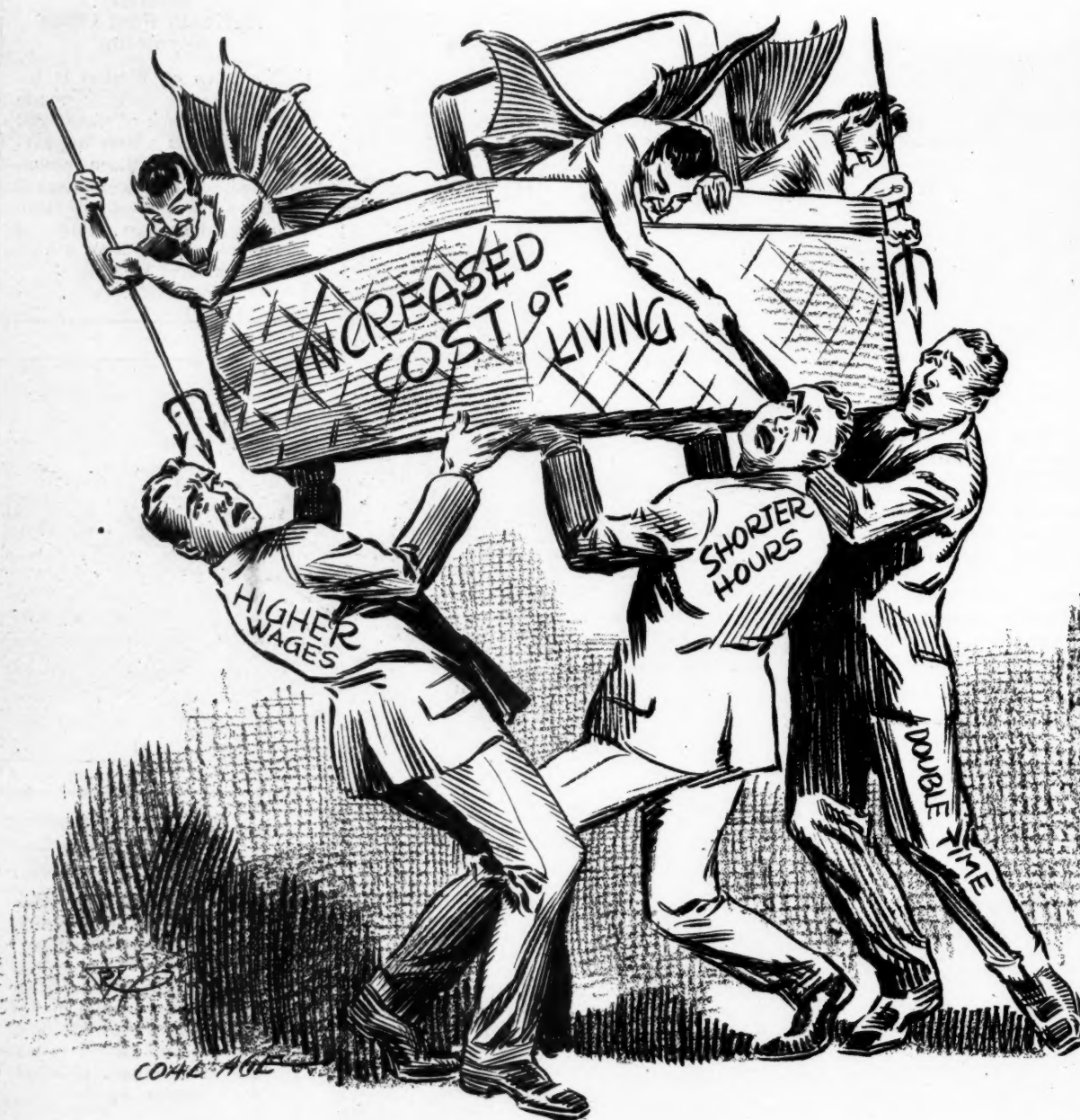
A scene along the road leading from Rock Springs to Winton. The southern part of Wyoming is a "world unclad of verdure." A little greasewood is found on the flats. The rocks are usually bare and almost rounded by the impact of wind-driven sand.

Entrance to the Man Way at Reliance No. 1

This concrete and stone portal leads steeply to the workings below. At the left side of the entry, as will be seen, is a noticeboard giving the rules of the state and mine in several languages.



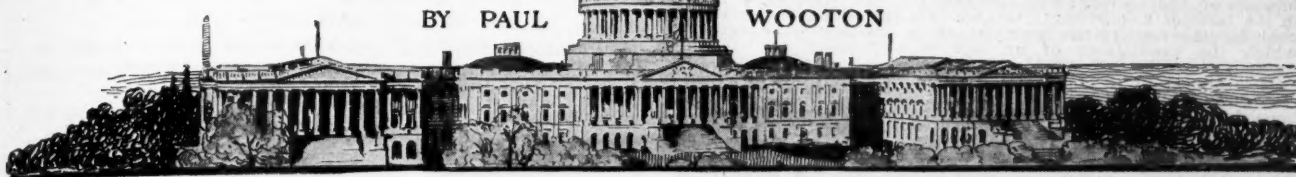
These Three Hold Up Your Living Costs



When the men in one trade want higher wages, shorter hours and double time everyone else wants the same and some want a little more. That makes everything cost more and increases the cost of living. When you work hard to boost the cost of living by raising wages, shortening hours and doubling time, the cost of living "strikes back like the very devil." Prices will never go down till wages fall and surely there is no one would like to see a reduction in wages.

NEWS FROM THE CAPITOL

BY PAUL WOOTON



The Railway Administration Reports Coal Car Conditions

Under peace time conditions, the Railroad Administration believes it is not likely to prove practicable to transport an average of 11,340,000 tons of coal per week during the rest of the year, as would be necessary if the country is going to consume 500,000,000 tons. In answer to the Pomerene resolution calling for explicit details with regard to the open-top car situation, the Railroad Administration has furnished what is regarded as one of the most comprehensive compilations ever made with regard to the coal-carrying equipment of the railroads of the country. The statement, which is signed by the Director General, follows in part:

Pursuant to resolutions of the Senate (S. Res. 152) adopted Aug. 4, 1919, I give you below answers to the questions propounded in the resolution:

First Question: Give the total number of coal cars now in use in the transportation of coal; and the number of empty coal cars belonging to the several railroad companies under the control of the Director General of Railroads which are suitable and available for the transportation of coal.

Answer: Exhibit "A" hereto attached gives the details in response to this question. Broadly, the situation is as follows:

The number of open top cars in the United States is approximately 1,067,000, of which over 99 per cent are owned by Federally operated railroads and all of which are, generally speaking, subject to interchangeable use on Federally and non-Federally operated railroads. Among open top cars are low-side, high-side, solid-bottom, drop-bottom, side-dump, hopper-bottom, and mill gondolas, and also coke cars. Open top cars are commonly known as coal cars, though some such are not suitable for coal loading.

At the present time something less than 10 per cent of these cars are awaiting repairs, either light or heavy. A large number of the cars so awaiting repairs are so held for very light repairs which can be speedily applied. During Federal control the methods of classification to determine what cars need repairs have been made much more strict, with the result that large numbers of cars are now shown as needing repairs which in former years have not been so shown. The Railroad Administration program of car repairs will, it is expected, gradually reduce the proportion of cars awaiting repairs despite the stricter classification.

The total result is that there are now approximately 900,000 open top cars in the United States ready for use without any repairs, and about 775,000 of these open top cars are suitable for coal loading. This type of equipment is, however, regularly used for heavy tonnage of other bulk commodities which cannot be handled except in open top cars. Adequate transportation for many of these commodities, particularly those used in highway construction and repairs, general building, and railroad ballast and improvement work, now requires a large number of these cars. Those actually in current use for the transportation of coal number approximately 600,000. Box cars have always been used to an important extent in some parts of the country for transporting coal.

Second Question: State whether the coal cars belonging to the railroads and under said control are now sufficient or have been during the past six months to meet the demand therefor.

Answer: During the first five months of the present year open top cars were regularly available greatly in excess of shippers' orders for them. The maximum was reached in February and March when the surplus of open top cars daily available amounted to 187,339 and 192,933 respectively.

There has at no time been any shortage of cars for anthracite coal loading.

As to bituminous coal, there occurred in June a slight shortage in southern West Virginia, eastern Ohio and western Pennsylvania due to an accumulation of cars in Lake coal trade, and increased detention of such cars under load at Lake Erie ports awaiting vessels, also arising from a strike of railroad shopmen on the Norfolk & Western railroad.

Since about July 15, 1919, coincident with a marked upward trend in production, there have been some shortages of cars for loading with bituminous coal in some producing districts, mainly in eastern Kentucky, Virginia, West Virginia, Maryland and Pennsylvania, and usually in districts producing the higher grades of coal. A strike of marine workers on coastwise ships, floods

and other operating difficulties have contributed to these shortages. Contemporaneously, however, there still exist slight surpluses of open top cars in some sections, principally in the West.

Exhibit "B" attached shows comparatively for 1919, as far as available, the weekly reports by the Geological Survey of percentage of full time operation lost by bituminous coal mines in the United States, and the cause of such loss, and indicates that up to July 12 the loss on account of "car shortages" was a minor one, and relatively much less than that from "mine causes" and "no market." The Survey's detailed reports show this information weekly by producing districts, and indicate the district situation to be as above stated.

Third Question: State the number of coal cars which have been constructed or purchased for the account of the Director General of Railroads which are under his control and which have not been sold or transferred to the several railroad companies, and if they have not been sold or transferred to the several railroad companies, give the reason therefor.

Answer: The purchase of 45,000 cars available for coal loading was arranged for by the Director General for delivery to railroads under Federal control. All these cars have been or will be put in service as rapidly as practicable, whether transferred to the several railroad companies or not. Thirty-seven thousand have already been built, of which 17,000 have been put in service. The remaining 20,000 already built are now being numbered and lettered and are being placed in service as fast as this work is being completed. The 8,000 not yet built will be put in service as rapidly as they are constructed.

Of the 45,000 cars available for coal loading thus purchased, 4,750 have not yet been assigned definitely to any one or more railroad companies; 32,800 have been assigned to various railroad companies and definitely accepted by them; the remaining 7,450 cars have been allocated to certain of the railroad companies, but up to this time these cars have not been definitely accepted, due to unwillingness of said companies to accept the cars. Mandatory orders to require the cars to be accepted have not been issued pending full opportunity for discussion with the companies, but the fact that in these instances the cars have not been accepted by the companies is not delaying the cars being put in service as rapidly as constructed.

Fourth Question: State fully the methods adopted by the Director General for the purpose of supplying the producers of coal with the necessary cars for transportation of coal to the consumers.

Answer: Cars when available in full of all requirements are placed for loading in accordance with shippers' orders. Whenever requirements exceed the cars available, each railroad endeavors to allocate cars to the service of the several commodities requiring open top cars so that the same relative service is accorded to each without undue discrimination. Commodities which can obtain adequate transportation in the rougher class of closed cars, although more conveniently handled in open top cars, are required to use rough box or stock cars when available in order that open top cars may be released for coal loading.

The cars available daily for bituminous coal loading are prorated among the mines on the basis of the rated capacity of the mines, or their orders, if less than that rating. The rated capacity is ascertained by a formula which has been adopted and promulgated for the use of all railroads by the Railroad Administration with the concurrence of the National Coal Association, and is in effect uniformly throughout the United States.

In what is known as Eastern Railroads Car Pool territory, there is a pool in which is included the ownership of open top cars other than coke cars of the railroads in the Eastern and Allegheny regions and C. & O. and N. & W. railroads. The territory covered may be roughly described as lying east of Chicago and St. Louis and north of a line following the Ohio River to Cincinnati and thence to Norfolk via the Norfolk & Western R.R. Such cars are distributed between the railroads members of the pool through the medium of a pool manager located in Pittsburgh, Penn. Elsewhere in the country coal cars are handled on rules which require that a car located off the owning line must be returned to the owning line loaded or empty. Inter-regional distribution and distribution between the territory of the Eastern Railroads Car Pool and the other four regions, is handled by the Central Administration in Washington. The aim throughout is to obtain the maximum service from the cars available.

Fifth Question: State what, if any, further action by Congress is required in order to meet the demands for the transportation of coal.

Answer: It is not believed that further action by Congress will aid in meeting the demands for the transportation of the coal which will be needed during the remainder of this calendar year. The matter is largely dependent upon practical conditions which will not be affected by legislation. A statement is appended showing some of the important conditions in this respect and indicating that if the demand to be supplied is as large as has been predicted by the National Coal Association there promises to be not only substantial difficulties in the transportation of coal but also in the production by the mines of the coal which can be transported. The transportation difficulties will not be principally or primarily a shortage of cars but the fact that the entire railroad plant—locomotives, cars, main tracks, terminal tracks, etc.—will be so occupied in handling a large business of all sorts that an abnormal amount of any particular business

such as coal will inevitably lead to congestion and delay. Nevertheless, the unified control of the railroad will admit of specializing on the transportation of coal to whatever extent is absolutely necessary to prevent actual hardship.

I believe it will be of specific advantage to the public if Congress would provide for an official inquiry by the proper branch of the Government (presumably the Geological Survey in the Interior Department) to ascertain the probable demand for coal for the rest of the year, so as to determine the extent to which the predictions of an abnormal demand for coal are justified.

It is important to emphasize that the relatively low production and purchase of coal up to the present date in this year have been due only in small extent to shortage of transportation and have been due to a large extent to "no market" or absence of demand for the coal, and in some parts of the country the lack of demand for coal still prevails. The weekly statements of the Geological Survey which are listed in the attached Exhibit "B," shows that beginning with January, 1919, and extending to June 14, 1919, the weekly loss of bituminous coal production on account of no market, ranged from 32.6 to 46.5 per cent of working time, whereas, during the same period, the loss of time on account of car shortage ranged from only 0.6 per cent to a maximum of 4.8 per cent. In the event any Congressional inquiry should be undertaken, it would be expedient to ascertain the extent to which the absence of demand has been due to the maintenance of high prices which discouraged demand.

Some of the practical considerations which will affect the production and transportation of coal during the remainder of this calendar year are the following:

The ability of the railroads to transport all the bituminous coal required for the rest of this year, will, of course, be largely dependent upon the amount required. On that point no accurate information seems to be available. The National Coal Association, however, has advertised that 500,000,000 tons of bituminous coal must be produced in the calendar year 1919 to meet the requirements of the country. This estimate of 500,000,000 tons is just about the production of 1916, a year of great industrial activity, with normal winter weather and normal storage of coal to begin with, whereas in 1919 the year began with storage piles greatly exceeding normal, winter weather was the mildest in history, and industrial activity, due to the readjustment of business following the war, has been at a low ebb for months. Another element to be kept in mind in estimating the prospective tonnage for which transportation must be furnished is the export movement, of which much has been said to indicate that the tonnage will be large, but with respect to which there is little accurate information readily available.

It may be noted that during the first six months of 1919 the coal consumption by railroads was about 26,000,000 tons less than in the corresponding period of 1918, during which latter year the fuel coal consumption by railroads aggregated 154,000,000 tons for the twelve months.

If 500,000,000 tons shall be needed in the present year, the prospects are that its transportation will be accompanied by difficulties and, especially in view of the heavy business to be expected this fall, it will be exceedingly difficult to transport the amount required. These difficulties will not be due primarily or principally to the car shortage, but rather to the fact that an abnormal demand for coal will be concentrated into an unusually short period, when the necessary use of the railroads for other purposes will make it difficult to handle the coal.

During 1918 every transportation preference possible was accorded to coal traffic in order to obtain the maximum output. This was done as a matter of war necessity and under the authority of war legislation.

Illustrative of what was done to transport the maximum of coal, I may cite the following:

- (1) The movement of both bituminous and anthracite coal was zoned by the Fuel and Railroad Administrations, and waste of transportation by reason of cross-hauling and undue long-hauling was avoided.
- (2) On many railroads, coal cars both loaded and empty, were given preferred service after live stock and perishables.
- (3) Bituminous coal moving to Lake Erie ports for transshipment was pooled, the result being a much smaller number of cars in that service, and a much lesser average detention per car at Lake Erie ports than has been the case this year. In the aggregate, the discontinuance of pooling in 1919 has required probably not less than 5,000 coal cars to be constantly engaged in Lake coal traffic this year in excess of what was so engaged last year.
- (4) Bituminous coal, and to a lesser extent, anthracite coal, moving to North Atlantic ports for transshipment was pooled, with a saving similar to that effected by the pooling of Lake coal.
- (5) Preference in car supply was accorded to coal mines by excluding from the use of coal cars, non-war traffic less essential than coal. This preference curtailed the transportation of road building materials more perhaps than of any other commodity and in the aggregate resulted in several thousand additional cars being maintained in the coal service in 1918 than would ordinarily have been the case.

Another important point which should be borne in mind is that the recent increase in bituminous coal production has been most pronounced in the eastern states where the higher grades of coal are mined. In a number of the eastern districts, production has already reached, or closely approximates that of the same period a year ago. If the production of the country as a whole is to be further increased, it must come largely from the central West and beyond. I would refer, in this connection, to the weekly reports of the Geological Survey on the production and shipment of coal, dated July 26 and Aug. 2, 1919, particularly the former which stated "an average of 10,000,000 tons a week will not be exceeded until buying increases in the Middle West."

Since the exceptional expedients mentioned had to be resorted to as war measures in order to move the average of 11,330,000 tons per week for the period of July 28 to Dec. 28, 1918 (and the greater average of 11,900,000 tons per week in the most intense part of that period from July 28 to Nov. 16, 1918) it is evident that without interfering with other business pressing for transportation, it is not likely to prove practicable under the modified conditions which have necessarily resulted from the termination of hostilities, to transport an average of 11,340,000 tons per week during the rest of the present calendar year (which would be necessary to bring up the total production and trans-

portation for the entire year to the suggested 500,000,000 tons). As already stated, however, it is believed that the unified control will admit of such specialization on coal as may be necessary to prevent real hardship.

I do not anticipate any shortages in transportation which will be in any sense exceptional or abnormal or which will justify oppressive prices for coal.

EXHIBIT A

STATEMENT SHOWING CLASSIFICATION AND NUMBER OF RAILROAD-OWNED OPEN-TOP CARS IN THE UNITED STATES, JULY 1, 1919

Classification	Number owned by Federal Operated Railroads	Number Owned by Non-Federal Operated Railroads	Total
Flat bottom gondolas.....	237,176	14,250	251,426
Drop bottom gondolas.....	275,782	14,921	290,703
Side dump gondolas.....	58,984	9,278	68,262
Hopper bottom gondolas.....	389,693	16,720	406,413
Steel coke cars.....	30,160	70	30,230
Total.....	991,795	55,239	1,047,034

NOTE—In addition to these cars there are owned by shippers and in use on Federal and non-Federal railroads privately owned open top cars (customarily called "individual" cars), numbering about 20,000. Non-Federally operated cars include 17,237 of Canadian ownership regularly available in large numbers for loading at coal mines in the United States.

STATEMENT SHOWING APPROXIMATE CLASSIFICATION AS TO USE OF OPEN-TOP CARS OWNED BY FEDERALLY OPERATED RAILROADS JULY 1, 1919

Classification as to Use	Number in Service
Designed and used for coke, being cars of large cubical capacity.	31,000
Designed and used for steel mill products, being cars of small cubical capacity.....	100,000
Suitable, and used for coal, ore, stone, sand, gravel, crushed stone, blast furnace waste, brick, lumber, sugar cane and sugar beets, and generally for commodities not affected by weather.....	860,000

EXHIBIT "B"

Week Ended	Per Cent.	Pro-duction	Total Lost	Car Short- age	Lost on Labor and Strikes	Mine Disa- bility	Account of No Mar- ket	All Other Causes
January 4	100	73.2	26.2	2.8	5.8	3.7	13.7	1.4
January 11	100	72.9	28.3	3.2	3.9	3.3	15.6	1.5
January 18	100	68.0	32.0	2.6	2.9	2.5	23.1	0.9
January 25	100	61.3	37.7	2.0	2.6	2.3	30.9	0.9
February 1	100	56.4	43.6	1.6	2.4	2.1	37.1	0.4
February 8	100	52.5	47.5	1.1	1.2	2.3	41.3	1.6
February 15	100	51.3	48.7	1.3	0.8	2.1	43.4	1.1
February 22	100	51.5	48.5	1.5	1.0	1.5	43.0	1.5
March 1	100	52.9	47.1	1.3	1.0	1.9	41.9	1.0
March 8	100	53.0	47.0	1.5	0.8	1.9	41.8	1.0
March 15	100	52.4	47.6	1.4	1.0	1.8	42.6	0.8
March 22	100	48.8	51.2	1.8	0.9	2.5	45.9	0.8
March 29	100	49.4	50.6	0.8	0.8	1.7	46.5	0.8
April 5	100	47.3	52.7	0.6	7.1	1.9	42.3	0.8
April 12	100	49.3	49.9	0.8	1.5	2.2	45.0	0.4
April 19	100	49.7	50.3	0.9	2.5	2.5	43.9	0.5
April 26	100	50.6	49.4	0.6	3.6	1.8	43.3	0.4
May 3	100	53.3	46.7	0.9	2.1	2.5	40.7	0.5
May 10	100	55.5	44.5	1.1	1.4	2.5	39.2	0.3
May 17	100	56.1	43.9	1.6	2.6	2.9	36.4	0.4
May 24	100	57.9	42.1	1.8	1.7	2.5	35.7	0.4
May 31	100	53.4	46.6	3.1	8.9	2.2	31.8	0.6
June 7	100	59.0	41.0	3.0	2.6	3.0	32.1	0.3
June 14	100	57.5	42.5	4.8	2.3	2.6	32.6	0.2
June 21	100	58.1	41.9	5.8	2.1	3.5	29.3	1.2
June 28	100	61.8	38.2	4.2	2.0	4.0	27.5	0.5
July 5	100	58.6	41.4	3.0	7.0	3.6	26.2	1.6
July 12	100	67.6	32.4	2.8	3.1	3.8	21.1	1.6
July 19	100	64.0	36.0	7.4	2.3	4.1	21.6	0.6

Employees Must Not Talk to Members of Congress

A recent act of Congress forbids government officials and employees from communicating directly with any member of Congress in regard to appropriations. This is expected to have an adverse effect on the technical bureaus, since Congress is less familiar with that class of government work. It has been customary for specialists to explain their particular needs to those members of Congress who are willing to be informed. By removing this personal contact it is feared that Congress cannot be impressed with the full importance of work being done or being contemplated by the bureaus.

At the request of the Swiss government the Bureau of Mines is sampling its purchases of coal in the United States, the expense being met by the purchaser. Other governments are expected to make similar arrangements soon. This has paved the way for the introduction of legislation sanctioning similar work for private consumers.

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Number 8

Prize is Still the Same, Print as Many Coupons as You Will

Great as is the product of the United States, year by year, it is nevertheless an output expressible in figures—an absolutely definite entity of limited dimensions. Thinking that it is greater than it is will not make it larger. Abstaining from work will however make it less; strikes will reduce it; lack of demand for any part of it will cause that part to fail of production. Every idle day reduces it while every active day increases it; every labor-saving machine and every efficient method of working makes it larger. But great or small what the production is, that it is, and not other. Looking at it through a magnifying glass will not in any way amplify its real proportions.

It is a wonderful aggregate, this output, but, divided into portions, it is not so very large. Whatever the sum total is, that is the prize for which we are collectively striving. If a large body of men succeeds in securing for each of its members a double handful of coupons for that prize, then the other members must get a double handful also or they will suffer in the division. If all get a like double handful of coupons there will be no gain for any one, for while the coupons are doubled the prize remains as small as ever.

Thus it happens that when the members of a body of men by strikes or violence get two coupons in place of one, double wages in short, they practically filch the shares of other men, who must divide the residue among themselves and thus secure a smaller return. When a miner strikes for inordinate pay he is striking for more than his share, and someone will have to go without. It may be a telephone operator in Oshkosh or a school teacher at Oskaloosa, or a professor of argiculture at Urbana. Someone must suffer, for unless there is larger production than before, the size of the prize is fixed; that prize is no more and no less than the whole annual production of the United States.

It is no use becoming disgruntled that cost of living goes up with increase in wages. To do so is to fail to be a good sport. It shows a disposition to see one's own wage raised, and a desire to see the wages of others kept stationary. We must always remember that higher cost of living and wage increases are twins, born the same hour, children of the same parents.

Strikes which close down production reduce product and so decrease wages. The man therefore who strikes and wins his strike not only gets another man's share, but he actually does his fellow workman far more harm than that. The striker reduces the other man's income by more than the striker increases his own.

It seems strange that strikes are popular. They would be bad enough if they were always unsuccessful; they are worse when they are won, for, when this is

the case, the individuals who watched the strike from afar have to pay the winner his increased wage. Their portion of the aggregate prize—the whole production—is thus decreased in two directions: The prize is smaller because the strike interferes with production and the onlooker's share is yet smaller because the strikers win a larger portion than is their due.

The men who, with threats of violence, first to individuals and then to the state, and with combinations euphemistically called "collective bargaining," have forced the price of labor to an improper height are the same men who cry "profiteer" to those who, without threats of violence and without combinations in restraint of trade, have merely accepted the larger prices offered them. It is easy to tell who are the real profiteers.

A Plunderbund

IN GREAT BRITAIN, there is a combination called the "triple alliance"—a union of the mine workers, the railroad men and the transport workers. It is named after the alliance between England, France and Russia, which was a union merely for defense, as events, indeed, amply proved later. Opposed to it was the "dreibund," a union of Germany, Austria and Italy, which was an alliance for offence; this fact Germany and Austria soon made clearly evident. Italy, as soon as she realized in what evil company she had fallen and how false were the fair promises of the plunderbund with which she was joined, immediately withdrew her alliance.

The new "triple alliance" in Great Britain is a dreibund, or plunderbund, and not entitled to the fair name by which it is honored by friends and enemies alike. It purposes to dominate in complete violation of the one-man-one-vote rule which we all recognize as binding. It would subvert the rule of the majority, and it would arrange for a larger increase in the wages of mine workers, railroad men and transport workers than has been, or will be, provided for the rest of the working public and would dictate legislation on domestic and foreign affairs in accord with its imperial pleasure. It purposes to use its powers as its members alone elect, relying on its ability to starve the public at its will, close the factories in which millions of men work and to let the people freeze to death.

The mine workers and the railroad men, the major powers in the British dreibund, are far greater proportionately to the whole body of citizenry than are the mine workers and railroad men of America. In 1918, for instance, there were 961,000 mine workers in Great Britain in a population of roughly 45,000,000 persons. They and their families represent therefore a little less than 10 per cent. of the whole population. In this country they constitute much less than 5 per cent. of the whole nation. However, this makes but little difference. Their voting power is not so important as their power to do injury by the "silver bullet" of starvation.

The public cries just now are directed to emptying the storage houses which are regarded as sources of the high cost of living. We shall truly be in a pitiable mess if the mine workers and railroad men decide that they will oppose by a strike the replenishment of the

food supply of the cities. Should the alliance of railroad men and mine workers create a panic in this country, or even in Great Britain, their action will so incense the people against them that with their numerical insignificance they will be, for ever, prevented from carrying matters with such a high hand as they now seem to desire to do. This they apparently know full well. They realize that the other workmen might never forgive them for their arrogance, and that their lot might always be made bitter for them by the reprisals of those they have been seeking to exploit.

In Great Britain they have for this reason decided not to take the evil step that they once contemplated, and the mine workers when asking for an increase far above the ascertained living cost carefully specified that it must be a charge, not on the overburdened consumer, but on the equally overburdened, but not equally popular, taxpayer.

In the United States, according to Thomas Kennedy, the president of the Hazleton District (No. 7) of the United Mine Workers, an organization like that of the British "dreibund"—for that word is preferable—is planned to be brought into being at the coming international convention of mine workers on Sept. 9. The four brotherhoods of the railroad men are going to join with the mine workers in kiting the wages of both and in making political demands on the President. Conferences between the leaders have already been held.

This is a true class struggle—a war between the coal and transport suppliers and the coal and transport users, the latter being the public in general. The alliance is of overwhelming strength, though neither mine workers nor railroad men are as necessary to our existence as are the farmers, but, as the world is now organized, there might well as well be no farmers, if we are not to receive the ministrations of mine workers and railroad men.

And, surely, this is true, that if the mining and railroad industries are so vital that they cannot be freely conducted but must be put under Government ownership, then the men of the mines and of the railroads cannot be free men; their work must be governmentally directed whether they will or no.

The reason why the public discusses binding these industries in chains of iron is because the unions have so often held up the conduct of their operation. The farmers are more numerous, more powerful, more basally important. Their industry might even more reasonably be taken over by the public, and the only thing that preserves them their freedom is the fact that they have so far not conspired against the public.

Individual farmers have repeatedly and almost universally sought the higher prices they could secure by free barter, but they have almost never forced those prices by a nation-wide trust, nor have they ventured to join in with another interest in the hope of jeopardizing the life and liberty of the people and of marching off with the plunder.

The mine workers are our good friends—honest, honorable men for the most part. When they realize the evil work that has been planned for them, one and all—union leaders, union and nonunion men—they will refuse like the British workers to undertake anything so vicious and treasonable as the plunderbund is planning for them, for miners are, as ever, Americans first.

No one should, and it is to be hoped that no one will, prevent them from conspiring to maintain a present

wage, equivalent to the wage before the war, based on the price of the commodities regularly bought by them before the war commenced. No one should, and let us hope that no one will, endeavor to keep them from a scale which will automatically raise the proper wage for today's labor to accord with the increased cost of living of tomorrow. But the scales now being sought are not so based, and labor does not seem to be looking for an adjustment predicated on so scientific a plan.

A mine with a low tonnage per man is like any other slothful member of society. It is an institution lacking in the proper sense of obligation to humanity.

One May Not Question Fate or Economics

ILLINOIS and especially the Belleville district is passing through a period of stress resulting from the fact that the people of the Middle West have been showing a great preference for Eastern coals. The Belleville district, before the war prosperity, was continually the scene of much trouble because the mines worked so irregularly that no one could make a living.

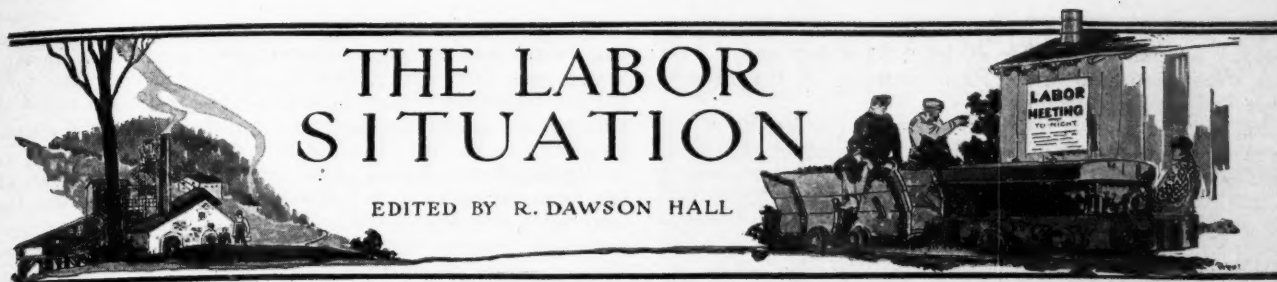
It has been the same again since the armistice was signed and there is a possibility that it will be a chronic condition relieved only at periods of excessive national prosperity when mines, that are normally unworkable, resume active operation to relieve the sore needs of the market.

The Belleville mines are, many of them, small and therefore not economical to operate. Their overhead is too high. The coal is not as good as in surrounding areas. In many cases they are not equipped with machinery. They find it impossible to compete when conditions are normal. The mine workers lay stress on a number of inconsequential matters—the cost of supplies for instance. This may be annoying but not really vital. The big trouble is unemployment.

The correct way to meet the difficulty is to bundle up and quit. Unfortunately most of them do not want to leave old surroundings where life has been pleasant; others have homes and cannot sell them, for the county of St. Clair is none too prosperous, and yet others have not the means to move.

So the men would have the market briskened for them by reducing the national production. That, they hope, will come about by introducing the six-hour day and five-day week. It is only a temporary cure but it appeals. And nationalization of mines also looks good, for the mine workers think the Government would work mines in all districts, whether they produce good or indifferent coal.

They hope that the Director of Mines when appointed would insist on coal being accepted gratefully regardless of quality, just as the Director of Railroads insists on railroad service being endured regardless of the inadequacy and discomfort. Thus Belleville would again find its mines busy and its mine workers making good wages. But unfortunately the Mine Director might be like Walker D. Hines and refuse to take over any but the best properties. As the Railroad Administration refused to take over and run many inefficient railroads, the Mine Director might refuse to buy a few or all the mines in the Belleville district, alleging that he could not operate them with profit.



General Labor Review

Perhaps it is not surprising that in the United States the United Mine Workers are thinking of establishing an understanding with the "Big Four"—the railroad brotherhoods—for in this action they only follow British precedent. What the railroad men can find in the mine workers in the way of coöperation it is hard to establish.

When the brotherhoods call a strike they tie up the mines at one end of the line and the factories at the other and they also prevent the householders from getting coal. With the mine workers to aid them, they cannot do any more than they can without them. It is only putting another padlock on the door and that a less secure one.

One cannot see where the brotherhood can gain from affiliation with other union men except in so far as moral support is afforded. On the other hand the mine workers would gain if there were a sympathetic strike because the nonunion mines would have to close if no cars were delivered. The strike would not be local but nationwide. However, the nonunion area is quite small and is continually contracting.

The objection to a change in policy of this kind is the fact that it discloses that the argument for collective bargaining—that it is a labor trust against a hiring trust—is no longer valid. It might be believed by an unthinking public that the United Mine Workers was called into being by a trust of employers, absurd though such a statement be, but it would be hard to believe that the union between mine workers and railroad men was so caused.

As therefore the proposed union between workmen is one between men who cannot aid one another there is little reason for the public to fear it. A strike of railroad men is an ill portent for the operator, as bad as a strike of his own men, but one and one do not in this case make two, for an idle mine is idle and no new strike can make it more idle. However, the public may be much angered by a combination of the men in two industries, and in that case the moral effect of their coöperation may be unfortunate for the mine workers rather than helpful to them.

The facts are these: Thomas Kennedy, of Hazelton, district president, No. 7, has stated that the results of the recent conferences between the leaders of the United Mine Workers and the railroad brotherhoods will be reported at the international convention of the former. Ratification of the movement is confidently expected.

During the present week occurs the tri-district convention of the United Mine Workers, District No. 1, at Wilkes-Barre. The consensus of opinion is that more pay will be demanded and a complete recognition of the union will be sought. Some believe that the demand for a 6-hour day, which was voiced at Scranton, will be allowed to drop so long as the pumpmen and men in charge of engines are

required to work only 8 hours and not 10 and 12 hours as at present. There is a demand that the coal companies provide the miners with drills and tools for their work. The question will be discussed, but how resolutely is, of course, not known.

In central Pennsylvania, John Brophy, president of District No. 2, addressed the following telegram to President Wilson which he dispatched Aug. 10, after addressing a large meeting of local mine workers at Johnstown:

"Following the organizing into labor unions of the employees of the Cambria Steel Co. of Johnstown, Penn., thousands of workers were discharged. This corporation refuses to confer with any group representing organized labor. Much distress has been caused by its arbitrary and coercive attitude, the situation having remained unchanged since the early part of the year.

"The continued refusal of this corporation to meet representatives of the organized workers is causing unrest and will inevitably lead to industrial disturbance.

"It is our desire to avoid, if possible, such a situation. That part of your Aug. 8 address to Congress which deals with the relations between capital and labor leads us to hope that through you the Cambria Steel Co. can be induced to confer with representatives of organized labor for the purpose of establishing bona-fide collective bargaining, thereby assuring industrial peace.

"On behalf of the miners of Johnstown, Penn., who are willing to remedy conditions by frank counsel, I ask that you use your efforts to secure us an opportunity for that counsel."

The Cambria Steel Co. is dealing with its own collective-bargaining association and the unions are of the opinion that company organizations of that kind should be outlawed. The trouble closely resembles that in Manhattan where there is a bitter quarrel between the Brotherhood of Interborough Rapid Transit Employees and the Amalgamated Association.

Declarations of the Federal judge who appointed the receiver of the Brooklyn Rapid Transit and of a state public service commissioner are being quoted with approval by the mine workers. The two authorities mentioned are both alleged to have said that the question of recognition of the union hinged on whether the members of the union constitute a majority of the men. Both the union and the collective-bargaining association in Johnstown claim a clear majority of the employees.

There is a disposition to make the Cambria Steel Co. a test case. Few of the steel companies are operating organized mines. If the union men of the Cambria Steel Co. can have the United Mine Workers of America recognized by the firm, then the more numerous steel-company owned mines in western Pennsylvania will be the next to be subjugated by the union.



BLUEJACKETS KEEP STEAM UP FOR PUMPS DURING YORKSHIRE (ENGLAND) STRIKE

Men of the H. M. S. Lion, who fought valorously in the Jutland battle, filling cars with coal for boilers at Trench pit, Garforth.

The mine workers of District No. 2 are expecting to demand a scale calling for at least \$6 a day and a five-day week, with numerous other changes in the present scale and working conditions.

On Aug. 14, several hundred miners at No. 1 mine of the Ford Collieries, near Russelton, Allegheny County, western Pennsylvania, went on strike to compel the reinstatement of a discharged employee. No disorder resulted, and both the company officials and those of the union said the trouble would be adjusted.

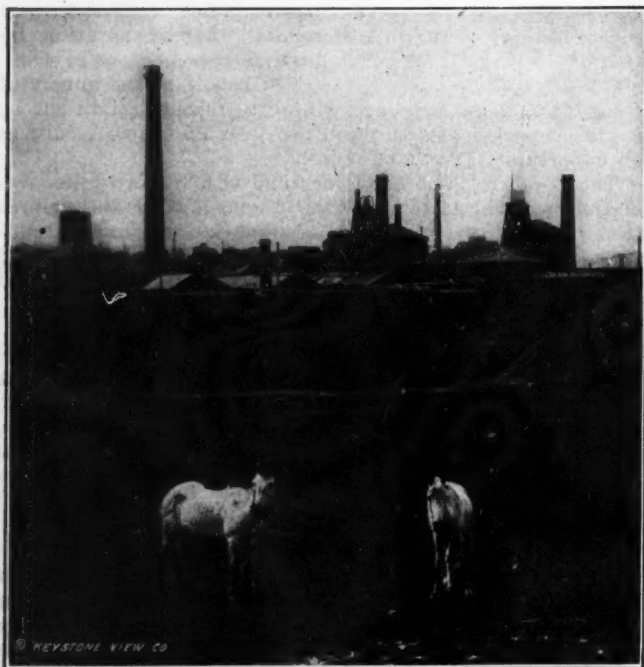
Interesting news comes from West Virginia where an agreement was recently signed tentatively between the leaders of the mine workers and the operators. A session of 250 union representatives of District 29, the district affected, was held at Beckley, W. Va. It lasted almost a week and was marked by no little tumult. It commenced Tuesday, Aug. 5, and ended Saturday, Aug. 9. In the end the contract was not signed. It may yet be approved, however, for the contract was submitted to a direct vote of the mine workers on Aug. 18.

Prior to the convention much opposition was exhibited to the agreement although the scale committee of the mine workers had secured, in effect, everything they asked for, even including the closed shop.

There was much opposition manifested by delegates when the convention was opened, but a good part of that opposition was withdrawn when the agreement was explained in detail. The convention, however, evidently did not wish to assume full responsibility for ratifying the agreement in view of the opposition among the various locals, although recommending to the locals that the agreement be ratified. As to whether the agreement will finally be given approval by the miners is a mooted question, as the ultra-radicals in the organization seem to be in the ascendancy.

NO WAGE INCREASE IN NEW RIVER NOW SOUGHT

The question of wages did not cause so much heart burning as the other provisions of the proposed agreement. The miners of District No. 29 want to be able to strike at will without being hedged about with restrictions such as the new agreement provides in the shape of prescribed methods of appeal and penalties for strikes pending negotiations. The miners object to the deduction for medical attendance. However, it has been pointed out that the deductions are not as large as in other fields. Another source of complaint is the increase in the rate for coal used in the homes of miners from \$1 a month to \$2 a ton.



IDLE BARROW COLLIERIES IN YORK SHIRE, ENGLAND
Note the little Shetland pit ponies in the foreground.

The contract provides for a mine committee of not more than three men at every mine where there is a foreman. These men must speak English. They must not interfere till the dissatisfied mine worker and foreman have failed to come to an agreement. If they interfere with the operation of the mine they are liable to discharge.

Captain Percy Tetlow, now international statistician of the union, tried hard to bring the delegates to indorse the contract presented to them. The opposition was, however, extremely strong, the mines at Meriden being closed entirely down as the men were all at Beckley lobbying against the approval of the contract.

It is estimated that the earning capacity of 50,000 mine workers in the mining territory traversed by the Chesapeake & Ohio Ry. was stopped during the continuance of the strike of the shopmen of that railroad. Miners have been leaving in large numbers.

NO CARS; NO WORK; SO BOLSHEVISM SPREADS

It is also feared that the enforced rest of the mine workers may only aggravate the spirit of unrest among them. Though many have been inclined to be skeptical of the extent to which the I. W. W. has made headway, it may be asserted that the radicals among the mine workers have not only become inoculated with the virus of socialism but even with that of more radical doctrines, and that the radicals predominate to such an extent that no one knows just what may happen nor when.

Following the example of the mine workers of District 20, those of District 17, which includes all the organized mines in northern West Virginia as well as those in the Kanawha field and intermediate territory, will also demand a "closed shop" agreement when it comes time to formulate the demands to be incorporated in the new wage contract.

That became apparent when President Frank Keeney, of District 17, in a speech at Eskdale on Aug. 6 in celebration of the organization of the Cabin Creek field, following a bitter struggle there six years ago, said: "No contract will be signed in West Virginia at the coming conference that does not carry the 'closed shop' and uniformity of the wage scale throughout the state. The miners of Cabin Creek shall have the same wages and conditions existing in the other fields of the state."

The celebration referred to was attended by several thousand mine workers from Paint Creek, Cabin Creek and Coal River. The men declare that the recognition of the union on Cabin Creek and Paint Creek was the point at which the entrance of 50,000 West Virginia mine workers into the organization was started. It will be recalled that in 1912 and 1913, when the miners on Paint Creek and Cabin Creek went on strike to enforce their demands for recognition of their organization, serious rioting broke out, it finally becoming necessary to call out the state militia. Eventually the strike reached the courts on an appeal from several court-martial cases, and was even aired in the Senate. Sensational writers did much muck raking and distorted unconscionably the true conditions. At the meeting on Aug. 6 Mother Jones was a speaker.

RISE NOT TIMED FOR BECKLEY CONFERENCE

Apparently some have questioned the purpose of the recent action of the Pocahontas and Tug River operators in raising wages just as the agreement in the New River field was up for approval at Beckley. As the southern field is as busy as it can be no sinister purpose could be suspected. The increase was made merely for the purpose of creating such a feeling of satisfaction with conditions that not only would the labor they had be held but an influx of new men would be created. The increase would also tend to keep the men from joining the union. While it is said that not all the Pocahontas operators were consulted and that some were therefore dissatisfied, nevertheless all will join in paying their wages in accord with the new scale which has not yet been given out in detail. The increase may well have caused dissatisfaction among the New River mine workers, whose representatives did not insist very strongly on an advance in wages, but the Pocahontas operators probably had no other thought in mind than to protect their own field.

Recognition of the United Mine Workers as an organization is the issue at stake in two strikes in the northern part of the state. One of these strikes is at Adrian among the mine workers of the Greene Coal Co. and the other among the employees of the Ford-Franklin Run Coal Co. of Meriden, W. Va.

Miners of the Belleville and Collinsville districts of Illinois, who have long rendered only reluctant recognition to the authority of their State organization, are now trying to override and overthrow the administration of State President Frank Farrington. The radicals, for the time in control, have brought about a strike which affects 76 mines and between 15,000 and 16,000 miners in the Twelfth District.

While it is doubtful whether the majority of the miners favor the fight that is being made, the older and more conservative men remain away from the meetings and the radicals have their way. In spite of orders of the strikers' organization that no meetings be held except such as are called by the strike officials, a number of locals have held meetings and most of them have voted to return to work. However, the vote has meant little more than an expression of sentiment, since few of the men have actually reentered the coal mines.

Reports are conflicting as to the results of active and persistent propaganda to make the strike statewide. The leaders of the strikers say that 60,000 men have joined the strike, but President Farrington declares that few outside of the Belleville and Collinsville districts have struck. None of the men north of Springfield are out, he says, and only three locals at Springfield. Strikers' emissaries are reported to have had a cold reception at various places in southern Illinois and in a few instances have been handled roughly.

LEADERS OF INSURGENTS WILL BE OUSTED

In an effort to strengthen and extend the strike a convention of the Twelfth District, attended by delegates from the other districts, was held Wednesday, Aug. 13, at Belleville. There were about 50 delegates and a large audience of strikers. Resolutions were adopted providing for a convention to be held Aug. 19 at Springfield "to devise ways and means to obtain readjustment of the wage schedule and transact other business." The resolution declared that all local unions were to remain on strike and ask all others to join in the strike, subject to the action of the convention.

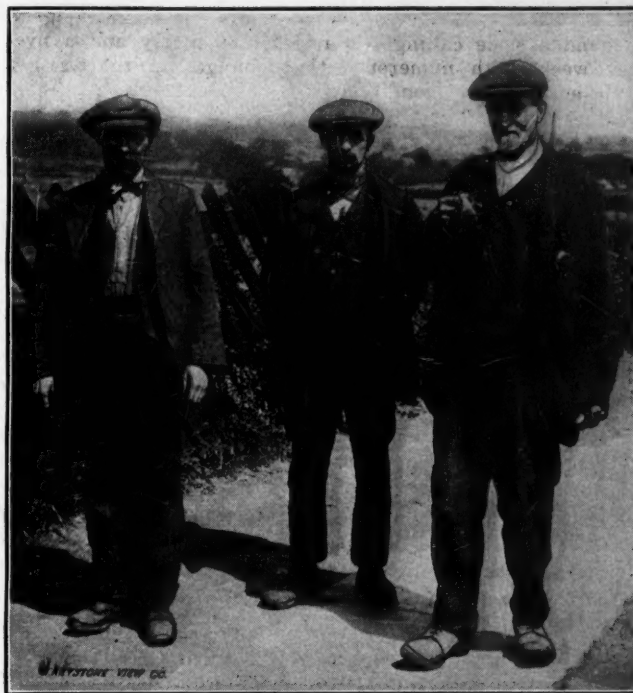
While the Belleville convention was in session, President Farrington wired to Walter Nesbit of Belleville, secretary and treasurer of the State organization, to obtain and forward by wire the names of all leaders of the strikers so that steps could be taken to expel them from the organization.

The dissatisfaction with Farrington, so far as it exists, is on account of his conservatism and his insistence that the men adhere to the war-time wage agreement and keep their pledge to remain at work until 60 days after peace has been officially declared. The element opposing him has made trouble before by starting unauthorized strikes, but has always been compelled to submit to authority in the end. The organization has heretofore dealt leniently with the agitators, but it is expected that this time they will all be expelled.

A FEW FEAR A PERMANENT SPLIT IN UNION

If the strikers are able to see the matter through and hold their convention and "reorganize," it will mean a division among the miners, with two distinct organizations, but it is expected that the state organization, with the support of the more conservative members even in the disaffected area, will be able to prevail and that the strikers will be compelled to return to work.

The latest reports indicate that the propagandists are not making progress. Emissaries who went to Saline County received such unwelcome treatment that they left town before the mass meeting was held, at which the men voted to continue at work. At Pana 2000 miners, at a mass meeting at which delegates from Belleville were heard, refused to strike and by a unanimous vote pledged their undivided support and cooperation to the National



PUMP MEN LEAVING TRENCH PIT AT GARFORTH
Even the pumpmen quit work and the sailors had to be brought to replace them

organization, in response to a plea by wire from the acting international president, John L. Lewis.

On July 27, the charter of District No. 18 of the United Mine Workers (the British Columbia and Alberta district) was cancelled by the international authority because the men persisted in striking in accord with the instructions of the One Big Union, to which many of the men belong. Rosedale mine in Alberta has been working, its men all being members of the United Mine Workers and discharged soldiers.

The charter was revoked when it was determined by Samuel Ballentyne, Samuel Caddy and William Dalrymple, international representatives, that the district president, P. M. Christopher, had an O. B. U. card and that the vice president and secretary-treasurer of the United Mine Workers had "lined up in favor of dual organization."

Winnipeg is desperately short of coal, due to the long strike. Regina reports that the lack of coal is hampering harvesting operations.

Up to Aug. 12, 200,000 British mine workers were still on strike—the men of the important Yorkshire section led by Herbert Smith, who seems even more redoubtably socialistic than Robert Smillie, and Smillie is a man who in America would be regarded as unusually radical. The Yorkshire Miners' Council refused to accept the Government's offer of settlement, overfair, as it was, to the miners and false, as it was, to the interests of the domestic consumer. But the Council decided at last, on Aug. 2, to submit the matter to the local, or, as the British would say, the "branch" unions.

On Aug. 9 the mine workers' leaders were told by the Coal Controller of Great Britain that it was impossible to concede to their demands, as to do so would involve a strike in every coal field of the country, for every mine worker would want the same concessions as were granted to the Yorkshire men. At that time the strikers were being supported by strike pay but the funds of the union were growing low, about \$1,250,000 having been expended. It was estimated that by Aug. 24 there would be no more money to dispense and the strike would perforce come to an end.

On Aug. 12 the Yorkshire Miners' Council recommended a return to work, which recommendation was accepted by all but the men in the West Yorkshire section who, on Aug. 15, were still out. At Pontefract 10,000 men voted against a resumption of work.



DISCUSSION *by* READERS

EDITED BY JAMES T. BEARD

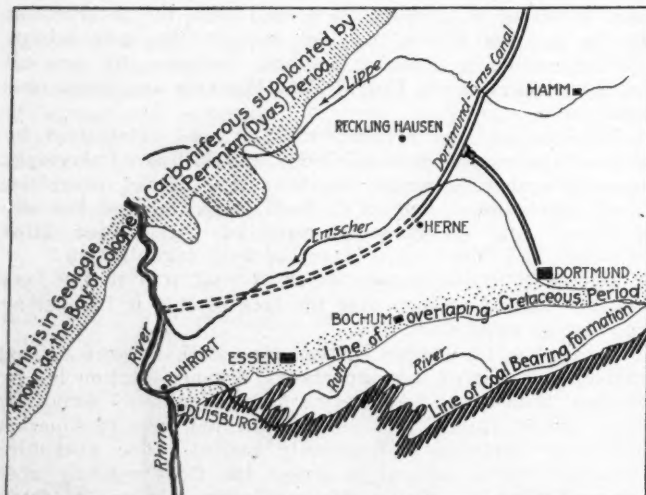
Coal Resources of Germany

Letter No. 2—Since reading the interesting letter of Geologist Eugene Stebinger, *Coal Age*, Apr. 3, p. 632, I have been trying to get together a few data stored among my mining notes collected during a course taken in the mining school at Bochum, Westphalia, 1901-1903, which I thought would be of interest to *Coal Age* and its readers.

The accompanying sketch shows the geographical situation regarding the coal deposits of Germany and the approximate boundary of the Ruhr Basin, which is the most important of the coal fields of that country, in respect to both the output and quality of the coal.

As far as is known, the coal beds of Germany extend about 90 km. (55.92 mi.), east and west, which nearly conforms to the strike of the formation, and 40 km. (24.85 mi.) from north to south, inclosing an area of, approximately, 3000 sq.km. (1158 sq.mi.).

These coal deposits belong entirely to the Carboniferous period. The average thickness of the measures is



THE COAL MEASURES OF GERMANY

about 3000 m. (1.86 mi.). The workable coal seams will aggregate 80 m. (262.4 ft.), divided between from 70 to 75 seams or beds of coal. The quality of the coal in these seams varies from a dry-and-lean anthracite to a very highly-volatile bituminous coal.

Although one-third of the coal measures of Germany is composed of semi-anthracite and anthracite, with from 0.6 to 0.9 per cent. of workable coal, the output is insignificant and entirely confined to the southern edge of the field and, for the present, at an inaccessible depth, in a few collieries to the north. The overlapping formation is a bituminous coal of high-grade, coking quality, the thickness of the formation being given as 600 m. (1968 ft.), with from 4 to 5 per cent. of workable coal having an average calorific value of 8300 lb.-cal.

(14,940 B.t.u.). This coal yields from 70 to 75 per cent. of coke of a hard and silver gray substance.

The next grade of bituminous coal is known as the "gas coal." The coal of this class is represented by a thickness of 300 m. (984 ft.), with from 2.5 to 3.5 per cent. of workable coal. The coking quality of this deposit is inferior to that of the class previously mentioned; but the yield in gas and nitrogen is very high, while that of coke is only from 63 to 65 per cent. of the charge.

Owing to the great folding of the strata, many large collieries operate from 10 to 20 or more seams of both classes of coal, at the same time. In almost every instance, the development of the mines is by the refilling method (flushing) and the waste or loss of coal in extraction is therefore insignificant.

The last and most recent of the bituminous formations, in this field, is that known as the "gas-flame coal." As far as this formation has been explored, the aggregate thickness is 1100 m. (3608 ft.), with from 4 to 4.5 per cent. of workable coal. This coal takes its name from the long, yellow flame, which is accompanied with a dense smoke. The coal is quite hard and has a cleavage that causes it to break in a prismatic or rhombic form. The coal has a calorific power varying from 7400 to 7600 lb.-cal. (13,320-13,680 B.t.u.). The coal reserve, in this formation, cannot be estimated, since the northern mines continue to discover new beds of the coal underlying the Cretaceous period.

SILESIAN COAL FIELD SECOND ONLY TO THE RUHR BASIN IN IMPORTANCE

The coal field next in importance of output lies in Upper Silesia, the entire area of the Silesian, Moravian and Polish Basin covering 5700 sq.km. (2200 sq.mi.). Slightly more than one-half of this area lies over the Prussian border. Like those of the Ruhr Basin, the deposits of this field belong entirely to the Carboniferous period. The measures lying generally flat are more readily prospected; and, a few years ago, a borehole was sunk to a depth of 2240 m. (7347.2 ft.), but even then failed to reach the bottom of the coal measures. However, a careful estimation makes the aggregate of workable coal, in this field, 190 m. (623.2 ft.), which makes it the richest coal deposit of the Empire, although the greatest bulk of the deposit is "gas" or "gas-flame" coal, with a lesser amount of good coking coal.

The third coalfield, in rank of importance, is the Saar Valley field, having an area of 600 sq.km. (231.6 sq.mi.) with 90 m. (295.2 ft.) of workable coal. Several of these seams, however, contain dirt bands, which increase the difficulty of mining and lessen the value of the coal. Most of the coal in this field belongs to the upper Carboniferous period, and only a portion to the middle Carboniferous.

Although the thickness of cover or depth of strata overlying the coal beds, in this field, is less than in other fields, it is a remarkable fact that the Saar Valley mines generate more gas than the mines in any other field in Germany. It was stated that, in the development of the Louisenthal mine, there was generated 248 cu.m. (8758 cu.ft.) of gas, per ton of coal mined and hoisted.

There are two smaller coal fields of high-grade fuel, lying west of the Rhine, near Aachen (Aix-la-Chapelle), which produce some valuable semi-anthracite. Another small field located in lower Silesia contains the same grade of coal as the Saar Valley field. But these two fields are unimportant in respect to their output and reserve coal.

Germany's oversea coal trade, if transported via the Rhine, had to pass through a foreign seaport and, for this reason, has always remained an unimportant feature of the coal industry of the Empire. It was for that reason that Germany started, some years ago, to construct the well-known canal (Rhine-Ems). A political disagreement between the liberals and the junkers, in the Prussian diet caused a cessation in the construction of the canal, for a long period. I understand, however, that shortly before the outbreak of the war the two parties compromised and the construction of the canal was completed.

HENRY BOCK.

Carlinville, Ill.

Bolshevism in America

Letter No. 2—I was much interested in reading the letter on this subject, *Coal Age*, July 3, p. 31. It is my belief that if the discussion on this and other subjects, in *Coal Age*, could be read by our foreign class of labor, the effect would be to mold many of them into different ways of thinking and develop in them our ideas and principles.

Bolshevism can be defined as a doctrine based on principles that are diametrically opposed to democracy. It is a doctrine championed by people who are as yet in a state of semicivilization. Bolshevism thrives among people who are not properly disciplined and who do not believe in progress and development, but ignore law and order.

EMPLOYERS MUST COÖPERATE WITH THEIR MEN IF THEY WOULD SECURE THE BEST RESULTS

Operators of large industries can do much toward preventing the spread of this doctrine in America. On the other hand, they can do much toward propagating its growth. All depends on their hearty coöperation and association with their employees, which will knit together the two essential factors of industry. On the other hand, if managers and superintendents hold themselves aloof, preferring to publish their orders as printed notices to be posted where they can be read, instead of meeting and talking with their workmen in a way that would gain their confidence, they erect a barrier of separation.

While coöperation and association of employer with employed will bring about greater efficiency, the lack of these conditions will prove a handicap to the success of any undertaking. To elevate their workers, employers must come down to the same plane or level, mingle with them, line up with them, work with them, and reason with them.

Observation shows that, in most large operations, 90 per cent. of the employees have never seen the men who managed its affairs; and perhaps they have worked for the same concern 10 or 20 years. Is it any wonder that, under such conditions, it is difficult to convince workers that their employers consider their interests in connection with their own? It is always hard to believe what we do not see. How much greater would be their influence over the workers if the management met them and talked with them in a heart-to-heart way.

PERSONALITY AND CHARACTER WINS MEN

During the war, the cry was, "shortage of labor"; but one could observe a difference in this respect between operations paying the same wages to their workers. While one place would be operating short-handed, at another place, in the same vicinity, it would be difficult for a man to secure a position even as miner's laborer. The difference was the result of the kind of treatment the men received at the hands of the officials in charge.

Let me suggest, in closing, that the successful manager, superintendent or foreman is a man having at least two attributes—one a personality and character that wins and holds men, and the other a skill and ability to keep things moving. The superintendent with these attributes brings sunshine into the dark recesses of the mine with every visit. The men are glad to see him come and sorry to see him go. Such a character is in strong contrast with the man who has a grouch and toward whom no one is drawn. Let us remember that success in mining and in every other industry depends on the character and skill of the officials.

West Pittston, Penn.

RICHARD BOWEN.

Sealing Up Abandoned Workings

Letter No. 1—Referring to the excellent article on this subject by Joseph C. Thompson, *Coal Age*, June 19, p. 1110, permit me to comment on one or two of the points he has mentioned.

In the first place, Mr. Thompson refers to the necessity of placing a "regulating door across the intake air-course" wherever a worked-out section or pair of entries on that side of the mine is to be ventilated. Assuming that this is done to ventilate the panels worked out on the air-course side, he suggests that no intelligent and experienced man would take the responsibility of saying that this air charged with the gases generated in those workings would be fit to sustain health and life.

It seems to me that Mr. Thompson has overlooked the fact that if the mine is properly laid out and the circulation of the air arranged to ventilate the panels on either side of the main road by means of overcasts, which would provide separate air splits for each panel or section, it will be entirely feasible to carry the intake air, first, into the live workings, and then return it through the abandoned workings, on its way out of the mine.

Again, Mr. Thompson suggests the probability of stoppings decaying in a comparatively short time. Let me say that this could not be the case if concrete, brick or tile is used in building the stoppings, which is the

¹This suggestion would apply to the abandoned workings on the return side. The sections or panels on the air-course side, however, assuming a double-entry system for the main road, could not be reached by the return current without overcasting the air twice for those sections.—EDITOR.

practice in many mining districts and is required by the mining laws in some states.

There is, further, suggested a progressive method of sealing off the abandoned panels, by leaving the first pair of panels when finished open and not sealing them until the second pair has been finished, in the meantime ventilating the first pair to keep them free from any accumulation of gas. Then, when the first pair of entries has been sealed, the ventilation of the second pair is continued until the third pair of entries is finished. I am curious to know what would prevent the gas from accumulating in the sealed panels and working back into the live section, which, to my mind, would be worse even than circulating the air first through the abandoned workings.

It is true, of course, that the gases confined in sealed sections of the mine do not have much opportunity to mix with air and become explosive; but, at any moment, a heavy roof fall or other occurrence may cause the sudden liberation of a large body of the pent up gases and we can imagine what would then be the result.

Braznell, Penn.

EDWARD H. COXE.

Lawful Examination of a Mine

Letter No. 3—In presenting, at the last meeting of the Illinois Mining Institute, a paper on the subject of the proper and lawful examination of a mine by the examiner, as reported in *Coal Age*, July 3, p. 18, Steve Gosnell chose a subject of the first importance in his state (Illinois), where the mining law permits the examination of a mine to commence eight hours before the time for the dayshift to enter.

With Mr. Gosnell and practically all of our state mine inspectors and mining men, I believe that the examination of a mine should not commence more than three hours before the time for the miners to go to work. That being the case, one is led to ask, What is the reason that the Illinois mining law has set aside such a provision? As has been pointed out, if the examiner goes in earlier than three hours before the time set for work, anything may happen to change the condition in a working place from that which the examiner found when he was in the place some time before.

CONDITIONS THAT DEVELOP IN A BRIEF TIME

A man on the nightshift may have blocked open a door, thus cutting off the circulation and allowing gas to accumulate in a place that was found to be safe by the examiner not long before. A roof fall may take place in a room and release gas, making that place and those adjoining it unsafe for work. There may be 50 or 60 cu.ft. of gas coming from the loosened roof strata, and, although 6000 or 8000 cu.ft. of air is passing in that place, a dangerous condition will surely follow. Indeed, the entire section on the return of that air may be rendered unsafe and an explosion would certainly result when the men entered for work.

My contention is that where a mine is generating gas and the examination is made eight hours or even six hours before the men enter the mine for work, the safety-first principle has not been applied. But, let the examination be made by a competent examiner, within three hours of the time for work to begin and, during that time, let no one be permitted to enter that section who might leave a trapdoor open, and there will be little

danger of an explosion occurring, especially if the workmen are provided with electric cap lamps.

Safety is not assured in a mine where the examination is not made in a proper and lawful manner. The examiner must be one of the most efficient men employed in the mine. Having cleaned and assembled his safety lamp with care, he goes to the fan, observes that it is running at the usual speed, takes note of the water gage and proceeds into the mine.

Starting at the intake, he follows the air-course to where his examination of the section in his charge begins. In regular order he examines each working place to detect whatever dangers may exist therein. Lowering his flame, he makes a careful test for gas. His observation and experience seldom fail to inform him where danger lies. The slowing down of the fan or any slight decrease in the circulation of air is known to him at once, and he promptly starts to ascertain its cause.

DANGERS SHOULD BE REMOVED WHEN FOUND

For years, I have performed the work of mine examiner and many a time wished that I had entered the mine earlier than the time allowed by law. I would much rather have removed the gas found in a place, at the time it was discovered, rather than place a danger sign at the entrance to warn men not to enter. Although the Colorado law says that the examination must commence not sooner than three hours before the dayshift enters the mine, some of our mine examiners go in earlier; and, though the practice is not lawful, they consider it insures the greater safety of the mine.

In Illinois, such a practice would be lawful, but the question of the relative safety of these two methods of examining a mine is open for discussion. In my own experience, I have always advocated the employment of a sufficient number of examiners to enable each one to make a careful examination of his section of the mine and remove at once whatever dangers he may find. Then, when the dayshift enters the mine, another force of examiners or safety inspectors should enter with them and remain with them in the mine during the entire dayshift of eight hours.

It is my opinion that such a plan will pay for itself by reducing the compensation for accidents. In the past, the practice has been too general to employ but one or two examiners, who are forced to go like the wind, in order that each may complete the examination of the section of mine in his charge. I am confident that the management of the Colorado Fuel & Iron Co. and other large coal corporations desire safety first, and will welcome a broad discussion of this question.

Farr, Colo.

ROBERT A. MARSHALL.

Firebosses as State Officials

Letter No. 12—Referring to the letter of A. Trubie, *Coal Age*, July 17, p. 119, I recall well the explosion in the Braznell mine that he mentions and which took place Dec. 23, 1899, as I was within seven miles of the place at that time.

In his letter, Mr. Trubie appears to throw the entire responsibility for that explosion on the fireboss and the mine management. It is my opinion that this is only partially true, for reasons that I will explain.

The Braznell mine was only one mine out of a possible fifty, which were located along the Monongahela River, and the workings of these mines were

often connected. Adjoining the Braznell mine was another operation that was known to generate a good deal of gas. It was not looked after any better than the Braznell mine, and it is easy to imagine that the conditions in the two mines were much the same in respect to gas.

Practical mining men will agree with me when I say that the chief source of trouble in these mines arose from the fact that many or most of them were ventilated by furnaces. Moreover, open lights were used exclusively, even where the gobs were full of gas, and in drawing back pillars it was not thought to be necessary to use safety lamps.

The fact that more explosions did not occur may be attributed to the poor circulation in these mines where there was scarcely enough air at the working face to support flame and the lamps burned low. While this lack of ventilation would be considered as reflecting on the management of the mine and the state mine inspectors as well, it may have been the real reason why more explosions did not occur.

EXPLOSIONS OCCUR WHEN FANS ARE INSTALLED IN PLACE OF FURNACES

What would seem to support this conclusion is the fact that, in those mines in which fans were installed and the furnace discarded that had previously been used to ventilate the mine, there were frequent local explosions, which were mostly confined, however, to one or two entries where they started.

The fact of the matter is that everyone connected with the mining of coal in that locality needed to wake up, and it took such an accident as the explosion in the Braznell mine to bring this about. It is the old story, so often proven in the history of coal mining, that we only learn by sad experience to "lock the stable door after the horse is stolen."

In the closing paragraph of his letter, Mr. Trubie seems to think that a state-employed fireboss would improve matters and make the mines more safe. In my opinion, that is not the case. A fireboss who would neglect his lawful duties, in order to avoid losing his job, would also accept a bribe from the mine management and report the mine clear, after finding gas in the workings. A crook is a crook, no matter what clothes we put on him.

As fireboss, I have worked for many different officials, but have never yet been censured for doing my duty. On the contrary, I have been commended many times, both by mine officials and state mine inspectors for the faithful performance of the duties of fireboss.

Wilkesburg, Penn.

A. A. ALLAN.

Letter No. 13—From the reading of some of the letters on this subject, it would seem that a few of the writers are willing to admit that a fireboss may be justified in failing to make a correct report of his examination of the mine, owing to the fear of losing his place. While I do not wish to appear to boast, let me say that I have yet to see the time when I hesitated to make a correct report of the conditions as I found them in the mine, either as fireboss in this country or as deputy in England.

A man who understands his authority and responsibility when holding the position of fireboss does not need to wish to be employed by the state as a means of increasing his authority. Any mine boss (foreman)

who has faith in his firebosses would expect them to give a correct statement or report of their examination, and few mine bosses of my acquaintance would seek to intimidate a fireboss for the purpose of inducing him to change his report.

In his letter No. 9, *Coal Age*, July 17, p. 119, J. H. Taylor expresses the idea that if the firebosses, in Indiana, were clothed with state authority and acted as assistants to the mine inspectors, good results would follow. Let me remind him that state officials are appointed by the party in power at the time, and he must admit that politics should have nothing to do with the question of the qualifications of mine officials.

My experience, acting as fireboss for different operators, convinces me that they all desire their mines examined in a thorough manner, although it may appear that, in a few instances, an operator may regard both the mine inspector and the fireboss he is obliged by law to employ, as necessary evils.

Now, in my opinion, the result of making a fireboss a state official would often give him an exaggerated idea of his own importance and, as Mr. Taylor has admitted, such a fireboss might often ask a mine foreman to perform unreasonable work, which would interfere with the production of coal and increase the cost of operation. I agree with him, however, in the suggestion that firebosses' reports should be sent each day to the state officials, which might often bring needed action more promptly.

FIREBOSS.

Clinton, Ind.

Transporting Powder in Mines

Letter No. 1—The lesson of the Baltimore tunnel disaster, which occurred at Wilkes-Barre, June 5, 1919, comes home to all of us with special significance. Viewed from whatever angle we choose to regard it, the inevitable conclusion is that it was a heedless and inexcusable occurrence; but the lesson taught is well expressed in the words of the Foreword, in *Coal Age*, June 19, "These men shall not die in vain."

Now that the first shock of the disaster has passed, and it is possible to contemplate the situation in a more composed state of mind, one feels that everybody who is at all concerned in promoting mine safety is more or less responsible for this terrible occurrence that has brought sorrow to so many homes. However, instead of aimlessly deploring the past, let us regard the future, and strive to devise some means of protection that will make impossible a recurrence of such a horror as the one that has just been recorded.

When one considers that there are mines throughout the country, where, in the absence of prohibitory laws, or in direct violation of such laws, miners carrying their own powder are permitted to ride to their work, it is surprising that accidents similar to that of the Baltimore tunnel do not occur more frequently. Certainly, the men guilty of such heedless practices can only be regarded as lucky when they escape injury and death. Their escape is not due to their own regard for safety and precautions taken by themselves to prevent accidents, nor is it the result of the protecting laws made to safeguard industrial workers, which they violate so frequently.

For a number of years it has been my custom to have all explosives used in our mines transported into the workings by a separate trip from that which carries

the men to their work. An ammunition car that is dry and properly insulated is provided and contains a dry covered chest, which is itself insulated from the car. As stated, the car is insulated from the motor to which it is attached by a nonconducting coupling. This ammunition car, with its dangerous load of explosives, follows the man-trip into the mine, keeping a safe distance behind it. By this arrangement, it must be agreed that there is little or no chance of the explosives being ignited, by sparks or by electricity.

There has never been a complaint heard from anybody in regard to explosives being stolen or lost. Such a suggestion, coming as it has from the union, would seem to indicate a lack of confidence in each other existing among the members. In actual practice, such fears will generally prove to be groundless.

LAW INADEQUATE, COMPANY DEFERS TO UNION

In reference to the Baltimore disaster, two facts stand out prominently. First, the anthracite mine law of Pennsylvania is certainly inadequate, in its relation to the transportation of explosives in mines if the conditions that led to this disaster did not violate its provisions. Second, neither the state nor the mine management can be justified in permitting the United Mine Workers to have their way in a matter that was a menace to the lives of the men employed in the mine.

It is claimed, that the union insisted on the powder being hauled into the mine in a car attached to the rear of the man-trip, to which the company reluctantly agreed. It would seem, however, that even this agreement was not carried out by the men, who appear to have had their powder with them in the cars in which they were riding.

Let me urge, then, that the matter of transporting powder into the mines be given immediate and careful attention by the mining department in every state. While the Baltimore tunnel disaster is a hard lesson, it is to be hoped that it will be a lasting one and that drastic laws will be enacted in every state that will safeguard, in a proper manner, this important feature in coal mining.

Let me suggest the adoption of such an arrangement as I have described and which has been practiced in our mines, successfully, for several years. In the enactment of laws covering this matter, there should be a severe penalty attached for its violation. I am sure that it is possible to make such an enactment as will safeguard mining operations in the future and render another disaster like this impossible. W. H. NOONE.

Thomas, W. Va.

Welding Split Gears to Axle

Letter No. 3—In reply to "Mine Mechanic," asking for information regarding the welding of a split gear on an axle, *Coal Age*, July 10, p. 73, let me say that I question the economy of such an operation. Assuming the gear is a trifle too large for the axle, I would ask, Why should it be welded to the axle and the latter thrown on the scrapheap when the gear has been worn too bad for further use?

Let me give a little of my daily experience in the successful use of the arc-welding outfit. Many axles come to our shop badly worn and too small for the gears. They must then be built up. For that purpose a $\frac{3}{16}$ -in. welding-rod is used to build up the worn portion

of the axle, employing the arc-welder for that purpose. The built-up portion is then turned down in the lathe, until it is of proper size to fit the gear.

Using a $\frac{3}{16}$ -in. welding-rod on both ends of a 4-in. axle, where the bearings had been badly worn, it took a machinist 13 hours to build up both ends. The axle was then put in the lathe and the journals turned down, until only $\frac{1}{2}$ in. of the welded metal remained. This was found to be firmly welded to the axle, and the turning down process was a success. In use, the welded metal did not become loose from the shaft to which it was fused in a solid mass.

If acetylene-welding is used on a job, it will pay to protect the metal before beginning the operation. This can be done with charcoal and save money, by its bringing the job up to the fusing point quicker and with less use of the costly oxygen. Whenever the electric current is available, however, the arc-welder will be found most satisfactory to use. By building up the portion of the axle that is too small, and then turning down the built up portion to the proper size, the axle can still be used when the worn gear has been detached and thrown aside.

MECHANIC.

—, Penn.

Letter No. 4—Referring to the inquiry of "Mine Mechanic," *Coal Age*, July 10, p. 73, regarding the welding of split gears to a locomotive axle, permit me to say that this would be poor economy and should never be done. The gears are made of the split type so that they can be removed when either the axle or the gears become badly worn and must be scrapped.

One chief objection to welding the gears to the axle is that locomotive axles are frequently broken, and if the gears are welded to the axle they cannot be removed for use again, but must be thrown on the scrapheap.

All locomotive axle gears are made standard to fit the axle and if they do not fit the chances are that the axle has become worn at that point and is a trifle too small for the gear. In any case, the gears should never be welded tight to the axle so that they cannot be removed if necessary.

ABUSE OF MINE LOCOMOTIVES IN PRACTICE

The mounting of a pair of split gears on a locomotive axle must be done in a workmanlike manner, as all mine locomotives are subject to much abuse in service. When running a locomotive in a mine, the motorman is very apt to use the reverse lever to stop the locomotive. This throws all the strain on the pinion and gearwheel. To give satisfactory service, therefore, it is necessary that the gears be properly mounted and made tight to the axle.

In case the axle has become worn and is a trifle too small, as frequently happens, I have found it good practice to use liners of suitable thickness to take up the play and make a snug fit. In the use of liners, it will be found an advantage to keep on hand different thicknesses of sheet tin. I have found that pieces of good stove piping make excellent liners.

It is a good idea to put in a liner thick enough so that when the two half-gears are drawn up tight, there will be a small gap or opening between them and the hub. When a gear has been mounted properly, and is good and solid it will give a ringing sound if struck with a hammer.

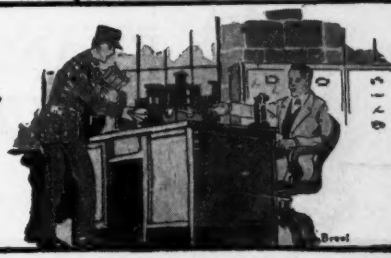
Windber, Penn.

T. O. HUGHES,
Mining Electrician.



INQUIRIES OF GENERAL INTEREST

ANSWERED BY JAMES T. BEARD



Contents of Mine Sump

The sump at the bottom of the shaft, in our mine, measures 10 ft. square at the top, 8 ft. square at the bottom and is 9 ft. deep. I have been asked to calculate the depth of water in the sump when it is one-third full, but have not been able to get the desired result. Kindly explain the method of solving such a problem.

Johnstown, Penn.

STUDENT.

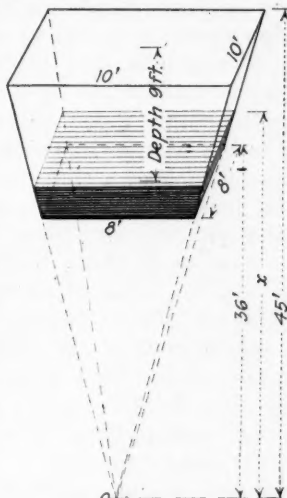
Referring to the accompanying figure, suppose the upper portion represents this sump, which is the frustum of an inverted pyramid whose apex is at *O*. In this position, the upper base of the frustum has an area of $10 \times 10 = 100$ sq.ft., while that of its lower base is $8 \times 8 = 64$ sq.ft.

Now, it is possible to find the volume of a frustum of a pyramid or a cone by the prismoidal formula, which is to multiply the sum of the areas of the two bases and four times the area of the section half-way between them, by one-sixth of the height of the frustum, or, in this case, the depth of the sump. The area of the middle section of this frustum is $9 \times 9 = 81$ sq.ft. Hence, the volume of the frustum is

$$\text{Vol.} = 9/6(100 + 64 + 4 \times 81) = 7.32 \text{ cu.ft.}$$

Another way of calculating the area of a frustum, however, is to first calculate the volumes of the two pyramids whose respective bases are the upper and lower bases of the frustum and whose common apex is at *O*. But, since the volume of a pyramid is equal to its base multiplied by one-third its altitude, it is first necessary to find the altitudes of these two pyramids in the following manners.

It is observed that the opposite sides of this frustum approach each other at the rate of 2 ft. in 9 ft. and will therefore come together, at the apex *O*, at a distance from the upper base of the frustum, $9(10 \div 2) = 45$ ft., which is the altitude of the greater pyramid, whose base is 100 sq.ft. Again, since the altitude of the frustum is 9 ft., the altitude of the smaller pyramid, having a base of 64 sq.ft. is $45 - 9 = 36$ ft. The respective volumes of these two pyramids are, therefore, $1/3(45 \times 100) = 1500$ cu.ft.; and $1/3(36 \times 64) = 768$ cu.ft. The difference between these two volumes, which is evidently the desired volume of the frustum, is, then, $1500 - 768 = 732$ cu.ft., as found before.



INVERTED FRUSTUM

By the conditions of the problem, one-third of the volume of the frustum, or $1/3 \times 732 = 244$ cu.ft., is the volume of the water contained in the sump, it being one-third full. Therefore, adding this volume of the water to that of the smaller pyramid gives the volume of a third pyramid, whose base is the surface of the water in the sump and whose altitude (x) is the perpendicular distance of the apex *O*, below the surface of the water. Thus, the volume of this pyramid is $768 + 244 = 1012$ cu.ft.

By a principle of geometry, these pyramids, being all similar, their volumes are proportional to the cubes of their respective altitudes. In other words, the altitude ratio is equal to the cube root of the volume ratio.

$$\frac{x}{36} = \sqrt[3]{\frac{1012}{768}} = 1.096$$

and

$$x = 36 \times 1.096 = 39.456 \text{ ft.}$$

Finally, therefore, the depth of the water when the sump is one-third full is the difference in the altitudes of these two last pyramids, or $39.46 - 36 = 3.46$ ft., or 3 ft. 5½ in., nearly.

A Fluid Ounce

Kindly explain the derivation of the term "fluid ounce," which has always been a puzzle to me, though in constant daily use.

CHEMIST.

Denver, Colo.

A fluid ounce is a liquid measure having a volume equal to that of one ounce, avoirdupois, of pure water, at maximum density (4° C.). This volume is calculated as follows:

$$1 \text{ lb. (av.)} = 7000 \text{ grains}$$

Then, since there are 16 oz. in a pound (av.),

$$1 \text{ oz. (av.)} = 7000 \div 16 = 437.5 \text{ grains.}$$

But, 1 c.c. of pure water, at maximum density = 1 gram or 15.43236 grains. Hence, there being 437.5 grains in the avoirdupois ounce, the volume of 1 oz. of the water or a fluid ounce is $437.5 \div 15.43236 = 28.3495$ c.c.

In like manner, the "minim" (a drop) which is the smallest liquid measure, has a volume equal to that of 1 grain of pure water, at maximum density. This volume is $1 \div 15.43236 = 0.0648$ c.c. There are, therefore, $28.3495 \div 0.0648 = 437.5$ minims or drops in a fluid ounce.

There are practically 16½ fluid ounces in a pint (liquid measure, U. S.), since 1 pint is equal to 0.43718 liters or 437.18 c.c., and $437.18 \div 28.3495 = 16.69$, say 16½ fl. oz.

It is common to estimate the volume of the liquid pint in this country as 16 fluid ounces, and there being 16 ounces in the pound, avoirdupois, gave rise to the old ditty, "A pint is a pound, the world around."



EXAMINATION QUESTIONS

ANSWERED BY
JAMES T. BEARD



Alabama First-Class Examination, Birmingham, July 21-24, 1919

(Selected Questions)

Ques.—What is termed a "dead hole" and what is a windy shot? Explain fully.

Ans.—A "dead hole" is one that is drilled in such a direction and to such a depth that the charge has no opportunity to perform its work properly. In other words, the line of least resistance corresponds to the axis of the hole, which makes it practically certain that the explosion of the charge will blow the tamping instead of breaking down the coal.

A "windy shot" is one in which the force of the explosion is spent largely on the air, causing a heavy concussion in the mine atmosphere and doing poor execution in respect to breaking down the coal.

Ques.—The anemometer makes 120 r.p.m., in an airway 8 ft. high and 10 ft. wide; what is the quantity of air passing per minute?

Ans.—The sectional area of this airway is $8 \times 10 = 80$ sq.ft. Then, assuming that the reading of the anemometer is an average reading for the entire cross-section of the airway, the quantity of air passing is $120 \times 80 = 9600$ cu.ft. per min. In general mining practice, it is not necessary to make allowance for the inertia of the instrument, as the reading only approximates the actual velocity of the air. It is more important to take the readings in such a manner that they will represent more or less closely the average velocity of the air current for the entire cross-section.

Ques.—If you had charge of a mine and the fan engine suddenly broke down, what would you expect to be the condition of the ventilation, and how would you continue to run the mine the rest of the day?

Ans.—The breaking down of the fan would mean a serious interruption of the circulation of air in the mine, which would then depend wholly on what natural ventilation might exist by reason of an air column existing in the shaft or dip workings. If the mine is generating gas it would be unsafe to continue operations in the workings, and the men should be promptly notified to withdraw from the mine. In any case, it would not be practicable to continue work, and orders should be given to shut down the mine, notifying the men to withdraw, unless some means is available and can be used to maintain the circulation sufficiently to permit the men to continue loading their coal.

In that case, however, no blasting should be permitted, and it will generally be better to discontinue the hauling, hoisting and dumping of coal. This must be determined by the mine officials, in accordance with the conditions found to prevail in the mine, but no chances should be taken in respect to safety.

Ques.—What instructions would you give in reference to the care and preparation of safety lamps, before

giving them to the workmen, and how would you instruct the workmen as to their use?

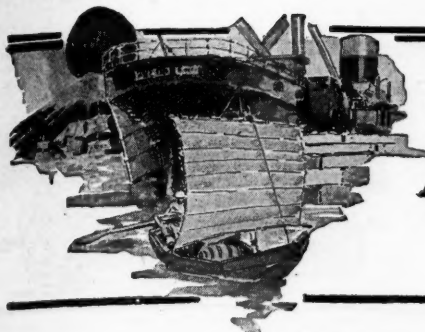
Ans.—Where safety lamps are used by the workmen in the mine a regular system of caring for the lamps should be employed. These lamps should be owned and cared for by the company, who should employ competent men to take charge of the lamproom and to clean, inspect and deliver all lamps to workmen as they go into the mine and receive the same from them on their return to the surface. Every lamp should be stamped with a number and, as far as practicable, each workman should receive the same lamp, day after day, and be held responsible for its use and condition. No lamp should be given to a man who has not been carefully instructed and drilled in reference to its proper use and handling.

Each miner should be taught the danger of tampering with his lamp or handling it in a careless manner. He should be shown the effect of gas on the lamp flame and instructed how to proceed when he observes the same indication or notes the presence of a cap in the lamp when working in the mine. He should be told to hold his lamp in an upright position and never to swing or allow it to fall, but always protect it against a sudden rush of air such as may be caused by a blast in the mine. Each man, on receiving his lamp in the morning should examine it himself to see that it is in proper condition and return it at night to the lamproom in the same condition.

Ques.—If, on examination, a large territory was found to be filled with explosive gas, what steps would you take to remove the same, a continuous current being used?

Ans.—Before taking any steps to remove the gas and promptly on its discovery, notify all the men on the return to that section of the mine to withdraw from their places at once, instructing them to extinguish their lights and guiding them by the safest course out of the mine. It may be necessary to notify and remove the men from the adjoining places on the intake side; and, at times, all of the men may need to be withdrawn from the mine before starting to remove a large body of gas.

Having withdrawn the men in danger, the work of removing the gas should be commenced by increasing the circulation of air in that section of the mine. First, however, place reliable men at all points of entrance to the return air-course and equip them with good safety lamps. Then start at the intake end of the section and watch the progress made, by deflecting the air current into the places where the gas is lodged, erecting brattices when necessary to carry the air forward so that it will sweep the faces clear of gas. While performing this work, a close watch must be kept on the lamps, which should always be protected from a rush of gas due to a possible fall of roof.



FOREIGN MARKETS AND EXPORT NEWS

EDITED BY ALEX MOSS



May Loose Foreign Coal Markets Through Misrepresentation

Officials of the Bureau of Mines lately have been worried over certain export coal problems. With Switzerland, Netherlands, Italy and France in need of many million tons of coal, experts in Washington have expressed some anxiety as to the methods employed by the American coal exporter in getting the European business, and, it is believed, unless the present American methods of selling coal to the European countries are changed, there is grave danger of losing that export trade.

It is alleged that certain American exporters have over-represented their goods to foreign buyers, and that, as a consequence, European manufacturers have been disappointed in the American product. "In the opinion of Bureau of Mines experts, it would be good business policy for American coal exporters to represent to foreign buyers a quality of coal that they can guarantee; or even to sell a quality of coal that is a little better than the representation.

The countries of central Europe are in need of coal for industrial purposes and gas-making, and western Pennsylvania, West Virginia and Pocahontas coal has been found to satisfy the needs of these countries.

Coal Imports Into Switzerland

The German-Swiss press announces that during the first half of May about 70 per cent. of the Swiss coal demand was covered by imports. The following quantities were imported between May 1 and 14: From right Rhine bank of Germany, 4107; left Rhine bank of Germany, 14,349 tons; Belgium, 46,055 tons; France, 2852 tons; Austria, 336 tons; and from other countries 74 tons.

Russian Coal Situation Serious

The coal output of the Moscow mine district increased from 600,000 tons before the war to 750,000 tons in 1918, states *Finans Tidende*, Copenhagen, of June 4, 1919. The Donetz district, which normally produced 19,000,000 tons a year, was taken by the Reds in the beginning of 1919, but had already been partly ruined by the Cossacks. In spite of the present possibilities for new production, the coal shortage of the Bolsheviks is very serious, owing to the destruction of the railroad.

When the war broke out Russia had in all only 50,000 miles of railroad, 4500 miles of which belonged to Poland and Finland. Russia proper had 30,000 locomotives and 570,000 cars. On Mar. 1, 1919, the Russian railroads were reduced to 36,000 miles, 4000 locomotives and 95,000 cars. If conditions do not improve—and of this there is no prospect—all railroad traffic in European Russia will soon be stopped. While Russia in 1914 made 800 locomotives, the production in 1918 was only 20. During the last four months of 1918 the three largest shops—Kolomensky, Brjansky and Sornowsky—repaired only 44 locomotives, and in January-February, 1919, all Russian works together repaired only 40.

Since January of this year private freight is no longer carried, while passenger traffic is kept up only on a few lines. The Don coals and Turkestan cotton cannot get to the cities; grain and sugar from the Ukraine must stay where they are, and in the end the railroads themselves must stop because of their inability to transport coal for their own consumption. Russia needs at least 25,000 locomotives, 400,000 freight cars, 50,000 passenger cars and 50 railroad shops.

Finance Commissioner Gukowsky has recently made a budget for the first half of the year 1919, in which he calculates a deficit of 29,000,000,000 rubles. Judging

from last year's result the deficit will probably be even greater. In 1918 a deficit of 31,000,000,000 rubles was expected, but this was a great miscalculation, as two-thirds of the income failed. In certain cases only 8 per cent. of the taxes on the bourgeoisie could be collected. The Red Army cost in 1918 about 17,000,000,000 rubles, and the rate of expense has more than doubled in 1919. Nationalization has up till now cost 2,000,000,000 rubles.

Fuel Situation in South China

Unless the output of coal in Japan is greatly increased or the industrial situation in Japan is greatly modified, there is every reason to anticipate that Japan will lose its hold on the fuel trade of South China in the very near future. For a decade or more Japan has had about 70 per cent. of the entire coal trade of South China, North China and Indo-China having most of the remainder. The price of Japanese coal of ordinary grades is so high in Japan at the present time, however, that in spite of the greatly reduced freight rates on coal for Hongkong and South China, Australian coal can cut under the Japanese quotations in this market, and is already taking a share of the business.

Only the present lack of tonnage moving from Australia to this part of the world prevents Australian mines from taking the whole of the trade. At the present time Japanese coal is being sold in Japan at higher rates than last year, quotations running at from 22 to 26 yen, or from \$11 to \$13 gold per ton, while Australian coal of the first quality—a far better fuel from every standpoint—can be had at Australian ports at from 15 to 16 shillings, or from \$3.60 to \$3.85 per ton. Several cargoes of Australian coal have already come into the Hongkong market so far this year and negotiations are now on for a large portion of the supply of the port.

Were it not for the fact that the chief users of coal in South China have yearly contracts for Japanese coal, trade would be almost revolutionized at once. The increasingly easier situation from a freight standpoint renders the increased use of the Australian product inevitable. Australian coal is going into the Philippines in a similar manner, the best Wallend coal being landed there at about \$14 gold per ton, as compared with \$12.75 per ton for Japanese coal f.o.b. Japan port.

There has been an increase in the imports of Kailin or North China coal into Hongkong during the current year over 1918 for similar reasons, but quality and all considered, Australian coal will take the market if present conditions continue.

American Coal in Europe

The upset position of the coal-mining industry in Great Britain these days has given rise to much discussion as to American methods of production and even the possibility of American coal being brought into the British market. The question has even got into Parliament, according to the American Chamber of Commerce in London.

The American Chamber reports that in reply to a question put in the House of Commons, the Secretary to the Board of Trade said he understood that it was a fact that contracts have been made for American coal for delivery to European ports, but that the cost of American coal delivered in European ports is at the present time higher than the corresponding price for British coal, owing to the higher rates of freight from America. There was no restriction on the importation of coal into Great Britain, but according to the statement American coal can only be delivered in Great Britain at very much higher prices than that at which British coal is now obtainable.

Coal Situation in New South Wales

In 1913 the total production of coal in New South Wales was 10,414,165 tons and in 1914, 10,390,622 tons; in 1915 it decreased in consequence of the war to 9,449,008 tons, and reached the low-water mark in 1916, when there was only 8,127,161 tons produced. The production has increased again to 9,063,176 tons, and if there is no further disturbance in the trade the probabilities are that the trade will continue to materially increase, and there will be a better prospect for export and doubtless a better prospect for tonnage on American vessels to Australia, as they can discharge at Sydney and load coal at Newcastle, which is only about 6 hr. away.

The Government of New South Wales appointed a Federal commission to examine into the coal situation and ascertain whether an increase in wages which would imply a sharp advance in the price of coal would be justified. Following the appointment of the royal commission, the Federal Government issued an order commandeering all the coal in the Commonwealth, and the miners have received their increase by about 3s. (72 cents) per ton from May 5, 1919.

American Coal Offered Germany

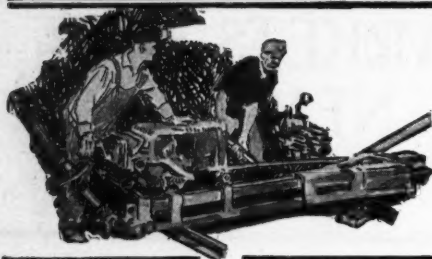
A dispatch to the New York *Tribune* under date of Aug. 10 refers to a statement in the Berlin *Tageblatt* which reports that offers have been received in the Essen coal region, of American coal at \$26 a ton, to be delivered through Rotterdam or Antwerp.

While a serious coal famine is threatened in Germany this winter, it is hardly expected the reported offers will be accepted, since the price, at the present rate of exchange, amounts to about 400 marks, whereas German coal of the best grade is sold for 70 marks. The paper is inclined to doubt the correctness of the report, in view of recent statements that America is unable to supply the coal requirements of France and Italy.

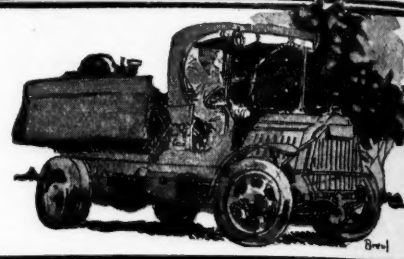
South African Coal

The fear was expressed by some of the witnesses before the Coal Commission in Great Britain that the United States might capture the British coal trade with the South American states. The Americans are not the only menace, however, for in South Africa they have also got their eye on this market. The South African coal owners have awakened to the possibilities of the export trade during the war, and it is claimed that South African coal can be landed on the east coast of South America at a much lower price than North American or European coal. The coal interests are urging upon the Union Government and the big shipping companies in the South African trade the desirability of establishing a direct service of steamships between South Africa and Buenos Ayres.

The low cost of production in South Africa is greatly in favor of the South African mines. Since the outbreak of the war the production has grown rapidly, and in 1917 amounted to 10,382,623 tons as against 8,801,216 tons in 1915. The increase is due mainly to the increasing quantity of coal bunkered and exported, which in 1917 reached 2,343,552 tons. It is a slight output compared with that of Great Britain, but there is great room for development in the coal-mining industry in South Africa. The available reserves of coal in the Union were estimated in 1911 at 56,200,000,000 tons, an estimate which is now generally conceded to have erred considerably on the conservative side. It is urged that a detailed survey of the South African coal fields should be made on the lines recommended by the Fuel Research Board in Great Britain.



COAL AND COKE NEWS



What Happened in July

[The bracketed figures in the text refer to the volume in which references to the matter noted may be found and should the reader desire further information he can obtain it in the place indicated.]

- July 1—Striking miners stop operations at mines of Loup Creek Colliery Co., at Page, W. Va. [XVI, 111].—The East Gulf Coal Co., of the New River field in West Virginia, is formed by consolidation of two large companies [XVI, 125].—W. A. Hurst, of Williamson, W. Va., dies [XVI, 127].—W. G. Sharp, president of U. S. Smelting, Refining and Mining Co., dies in Boston, Mass. [XVI, 232].—The miners strike at the Kathleen mine of the Union Colliery Co., near Duquoin, Ill. The grievance is over a question of wages [XVI, 64].—Anthracite Conciliation Board takes effective measures to adjust matters between employers and employees of West End Coal Co., at Mocanagua, Penn. [XVI, 111].—Amendments to the Coal Mines Regulation Act, of Canada, come into effect. They have to do with the examination of coal mine officials and miners [XVI, 78].—The Southwestern Coal Operators' Association holds its annual meeting at Kansas City, Mo. [XVI, 79].
- July 2—Employees of West End Coal Co., at Mocanagua, Penn., return to work [XVI, 111].
- July 4—The first-aid field meet of the employees of the Alabama Fuel and Iron Co. is held at Acmar, Ala. under auspices of U. S. Bureau of Mines [XVI, 275].
- July 5—Employees (3000) in the Belleville mining district of Illinois, near St. Louis, Mo., go on strike [XVI, 284].
- July 7—Three men are killed and seven others seriously injured by fall of rock and earth at O'Neill mine of Pittsburgh Coal Co., near Fayette City, Penn. [XVI, 125].
- July 7—Rocky Mountain Institute meets at Salt Lake City, Utah. Papers are read and discussed and mines visited [XVI, 196].
- July 8—Breaker boys at No. 10 colliery of Lehigh Coal and Navigation Co., of Lansford, Penn., strike and tie up the plant [XVI, 111].—The surface plant of the Hafer Washed Coal Co., at Cartersville, Ill., is destroyed by fire [XVI, 126].
- July 9—The board of directors of the National Coal Association hold a meeting in Kansas City, at which important questions are discussed [XVI, 124].—Six men are killed and ten others are seriously injured in explosion at colliery of Lehigh Coal and Navigation Co., Lansford, Penn. [XVI, 125].
- July 8-11—The tenth annual meeting of the Mine Inspectors' Institute of America is held at Indianapolis, Ind. [XVI, 144].
- July 11—F. M. Chase, vice president of Lehigh Valley Coal Co., Wilkes-Barre, Penn., gives his annual dinner and reception to staff of his organization [XVI, 171].
- July 12—Important meeting of southern West Virginia coal operators is held at White Sulphur Springs, W. Va. [XVI, 169].—The Washington Gas Coal Co., of Washington, Penn., is organized [XVI, 170].
- July 14—The agreements entered into with the War Trade Board by parties in the United States in connection with sale or delivery of coal, coke and oils, are cancelled [XVI, 155].
- July 15—The Leggetts Creek colliery of the Hudson Coal Co., Scranton, Penn., is purchased by syndicate of Boston and Cleveland capitalists [XVI, 170].
- July 17—At Ridge colliery of Hudson Coal Co., Parsons, Penn., 1500 employees
- strike [XVI, 158].—Boys at Evans colliery, Beaver Meadow, Penn., strike and tie up the plant [XVI, 158].—Some 2500 miners strike at the mines of the Central Coal and Coke Co., in Missouri and Kansas [XVI, 200].
- July 18—The Commissioner of Internal Revenue announces that \$1,500,000 will be returned to exporters of coal [XVI, 154].—An explosion of gas at the Carswell mine of the Houston Collieries Co., near Welch, W. Va., causes the death of six men [XVI, 191].—An investigation to determine whether the steady advance in the price of coal since the signing of the armistice is due to economic causes or to profiteering, is proposed in a resolution introduced in the Senate by Senator Frelinghuysen, of New Jersey.
- July 21—The miners strike at the Allegheny Steel Co.'s mine in Brackenridge, Penn. [XVI, 200].—The increase of six shillings (\$1.50) per ton on price of coal in Great Britain comes into effect [XVI, 158].—Announcement is made of the retirement of F. J. Hayes from the presidency of the United Mine Workers [XVI, 243].
- July 22—The operators and mine workers of the New River, W. Va., field hold a conference at Charleston [XVI, 200].—The Attorney General of Pennsylvania hands down an important "boundary pillar" decision [XVI, 209].
- July 24—Governor Sproul, of Pennsylvania, approves the amendments to the Workmen's Compensation Insurance acts [XVI, 209].—Lenroot introduces a bill in the United States Senate to provide for the leasing of coal deposits owned by this country outside of Alaska [XVI, 240].—Senator Lenroot introduces a bill in the Senate at Washington to provide for the disposal of non-metalliferous mineral deposits owned by the United States separate from the surface of the lands wherein they lie, and for other purposes [XVI, 240].
- July 25—The Oklahoma Coal Producers' Association holds a special session at McAlester, Okla., to discuss fuel oil competition [XVI, 253].—The 15th annual convention of the Pennsylvania Retail Coal Merchants' Association is held at Reading, Penn. [XVI, 253].—The strike of the miners of Great Britain (with the exception of the Yorkshire men) ends [XVI, 199].—District No. 1, of the United Mine Workers of America, holds an important meeting at Scranton, Penn. [XVI, 243].—The men at the Webb mine at Shadyside (near Bellaire) Belmont County, Ohio, decide to go on strike [XVI, 283].
- July 26—Fifteen teams participate in the first-aid contest held at Norton, Va., under auspices of the Bureau of Mines and the Virginia Coal Operators' Association [XVI, 277].—Secretary Glass signs decision relative to insurance of discharged soldiers [XVI, 240].
- July 28—The miners of four companies at Adrian, in Upshur County, W. Va., go on strike [XVI, 284].
- July 30—The 1000 employees of the Locust Gap colliery of the Philadelphia & Reading Coal and Iron Co. strike [XVI, 243].

Harrisburg, Penn.

Decrease in total fatalities of first half of 1919 compared with similar period for 1918—Mines fatalities greater this year, comparatively. Chief Button, of Department of Mines, to investigate mine-cave situation at Scranton.

A total of 1,589 persons were killed as the result of accidents on public service lines, in the coal mines, and industrial plants of Pennsylvania during the period Jan. 1 to July 31, of the present year, according to a report received at the Workmen's Compensation Bureau of the state.

As compared with 1918, when 1,808 people were accidentally killed in the first seven months of the year, the figures for 1919 indicate a decrease of 219 in the number of fatalities.

This may be accounted for by letting down from war-time speed in production at industrial plants and in the mines. In spite of the disaster at the Baltimore Tunnel of the Hudson Coal Co., in Wilkes-Barre, where ninety-two lives were snuffed out, the record for the total of the seven months compares favorably with a similar period previous to the war and would indicate that 1919 will show a decrease over 1918 fatal accidents by about 400. Analyzing these totals the total fatalities for the seven months of this year were divided as follows: Industrials, 606; public service, 300; mines, 683; in 1918 the figures were as follows: Industrials, 801; public service, 348 and mines 659. The Baltimore Tunnel disaster does affect the mine fatalities, causing the 1919 figure to exceed somewhat the number of mines fatalities for 1918.

Seward E. Button, Chief of the State Department of Mines, has gone to Scranton to look after the state's interest in the mine-cave situation which has assumed serious proportions on account of recent developments. For the last few weeks several mine caves have occurred in the Hyde Park section of Scranton and, since the death of the Warburton boy, the people of this community have become aroused and are demanding that the state take action on the matter.

Various suggestions have been made for dealing effectively with the mine-cave problem; the residents of the hard coal fields believe the most practical plan is to call a special session of the Pennsylvania Legislature for the passage of a law that will safeguard the people of the community against the continuance of this peril.

Scranton, Penn.

Mine cave causes death of one boy and injury of another. Meeting of Scranton Surface Protective Association held. District attorney asked to investigate death of boy. Coroner called upon to hold inquest. Telegram sent to Governor Sproul asking for remedy for cave menace.

The mine-cave situation in Scranton, Penn., reached an acute stage on Aug. 12, when a boy—Peter Warburton—was buried alive in a cave which occurred in West Scranton at the Diamond mine workings of the Delaware, Lackawanna & Western R.R. Coal Department. The victim was one of three boys who were playing on Roberts Court; one escaped injury, another was partly buried and the Warburton boy was covered by tons of earth and rock. The boy partly buried was rescued from the surface and the body of the Warburton boy was recovered from the interior of the workings by a mine rescue party. This accident, following a series of caves that considerably damaged private and public property in the vicinity, caused great indignation and it is said that this is the first death of the kind due directly to a mine cave.

On the night following this accident a meeting of the Scranton Surface Protective Association was held at which a number of citizens not affiliated with the society were present. The greater portion of the evening was taken up with a discussion of the cave accident. Resolutions were unanimously passed calling upon the district attorney of Lackawanna County to investigate the death of the Warburton boy, to prosecute on charges of homicide all responsible parties and to conduct an inquest in the case. A telegram was also ordered sent to Governor William C. Sproul criticising his attitude toward remedial mine-cave legislation and asking him to offer a solution of the mine-cave menace. A committee was appointed to look after the Warburton case; to spread news of

the accident, to inform state officials who had promised to try to remedy conditions here, to carry the case to court and to insist on its vigorous prosecution. Another committee was appointed to draft an ordinance regulating mining in the city, to present the measure to the city council and to urge its passage.

Philadelphia, Penn.

Midvale Steel and Ordnance Co. establishes pension plan—applicable to coal corporations—\$30 a month to male employees at 65 years of age, if 25 years of service have been given. Home-building plan also established by Midvale company. Employees paying 10 per cent., company loans 90 per cent. of value of building property.

Many of the big corporations of the country have worked out comprehensive pension and home-building plans. Some of these concerns have no direct connection with the coal industry, others have subsidiary companies engaged in the production of coal and coke and still others are essentially coal corporations. The plans of all these concerns should be interesting to coal men. Among those of the middle class may be mentioned the Midvale Steel and Ordnance Co. On May 7, 1919, this company established a plan under which pensions are paid to its employees. What appears to be distinctive, says *Iron Age*, is the provision for the payment of a uniform pension of \$30 a month to employees eligible under the requirements, regardless of position or wage or salary previous to retirement. This amount is somewhat more than experience has shown to be the average paid under some industrial pension plans heretofore in operation. Attention has frequently been called to the desirability of establishing a basis under which the allowance will come as practicable to provide for the physical wants of the pensioner. The Midvale plan provides that all male employees of the company are eligible to a pension on reaching the age of 65 and women employees on reaching the age of 55, provided in both cases that a service of 25 years has been completed. This plan was effective on July 1 and will be administered by a pension committee appointed by the president of the company, who is the court of last appeal in case of questions arising.

Another matter of considerable interest in connection with the Midvale company is its home-building plan which came up for initial public discussion on May 10, 1919, at a meeting of the elected representatives of employees and officers of this company, says *Iron Age*. The employees' representatives asked that the Midvale extend its activities in the direction of improving conditions in the various communities in which its works are located by acquiring property and building homes for employees. At a meeting of the board of directors held on June 4, a fund of \$2,500,000 was voted for carrying out a home-building plan. This plan includes assistance to employees to acquire their own home and they are urged to build rather than buy existing houses; the object being to increase the number of houses in the communities in which the several works of the company are located. In accepting this Midvale plan, the employee is required to provide at least ten per cent. of the total value of the building property; the remaining 90 per cent. will be loaned by the company at five per cent. interest. No loan will be in excess of \$8,000 and payments are to be made in monthly installments to be deducted from wages. While the maximum term of the loan is 12 years, the purchaser has the right at any time to pay off any part or all of the loan. Taxes are paid by the company and charged against the loan account of the purchaser, and the same provision is made as to insurance. Monthly payments include interest and this is charged against the net balance due at the beginning of each month.

Ownership of a home carries with it an entirely different attitude of mind toward the community in which a person lives; the proprietor of a home tends to be a good citizen and the company encouraging its employees by the kind of practical assistance offered by the Midvale corporation, generally reaps the additional benefit of more loyal service from its employees.

Charleston, W. Va.

Little coal mined in the C. & O. territory—loss 375,000 tons. Car supply in most fields fully 50 per cent. below normal

—aftermath, shortage of labor in some districts. Food supplies running low. Navy may be seriously inconvenienced for coal.

Production reached the vanishing point in at least three of the largest producing sections of West Virginia during the week ended August 9, the mines in the districts shutting down pending the return of striking Chesapeake & Ohio shopmen. Operators had been sanguine that it would be possible to resume producing coal by August 11, but the strikers refused to return to work, in response to the orders of their national officers, and consequently no attempt was made to operate any coal trains whatsoever on the C. & O. system. The Big Sandy, Logan, Kanawha, and New River fields were, therefore, without cars and motive power. Under such circumstances operations were not attempted and production at the rate of 125,000 tons a day was being lost. It is estimated that the loss for the three days of the week ended August 9 was 375,000 tons.

Mining was also curtailed in other parts of the state, indirectly from the same cause; the car supply in most fields being short fully 50 per cent., it is difficult to estimate just how seriously the output was affected throughout the state. The supply of cars was so short in fact that producers were holding meetings to deal with that situation. Even when the strike which has brought production to a stop is settled, one of the aftermaths will be a shortage of labor in the fields affected by the strike, as there has been a general exodus of miners from the Logan and other fields since the strike began. While some will return as soon as conditions are normal there is certain to be, according to interviews given by leading producers, a shortage of labor whenever present conditions are overcome.

The shipment of food having been suspended at the same time coal trains were annulled, many mining communities have not had new food supplies for almost a week and consequently such supplies are running low. In the event it is necessary, emergency trains could be operated; but with thousands of miners out of work and with the food supply lessening, conditions are serious from the standpoint of the welfare of miners and their families.

The output for the few days the mines of the New River field were able to operate during the week ended Aug. 9 was limited to about 40,000 tons or less, or about 25 or 35 per cent. of capacity; the prospects were that production would be even lower than that for the following week. While the Virginian Ry., which touches the New River district, was moving some New River coal, there was a complete paralysis, otherwise, in operations at the outset of the week. As the New River field supplies the Navy with a large tonnage of coal, there is a possibility that this branch of the Government may be seriously inconvenienced until supplied wholly from the Pocahontas district.

In common with other districts on the Chesapeake & Ohio system, the Kanawha continued to feel the effect of the strike of the C. & O. shopmen. No coal or any other kind of freight trains being moved during the first part of the week ended Aug. 9. Production was paralyzed on August 7, 8 and 9. It continued to be at a standstill when the following week began, except on the north side of the Kanawha River reached by the Kanawha & Michigan Railroad. The large mines on Paint Creek, Cabin Creek, and Coal River were all shut down having no cars and with no coal loaded out. As far as it is possible to estimate not more than 30 per cent. of the normal output was mined during the week in question, amounting probably to 60,000 tons, and that was produced during the first three days of the week.

Fairmont, W. Va.

Northern West Virginia Coal Operators' Association aroused over poor transportation. Large mine opens in Monongalia County—Active operation in Monongalia and Preston counties.

While there was a plentiful supply of cars on hand in the Fairmont region and in other northern West Virginia districts at the outset of the week ended Aug. 9, representing a Sunday accumulation, the supply rapidly dwindled until by the end of the week there were only 648 cars available in the Fairmont region, the same proportion being furnished other districts in the northern part of the state. There were sixty-nine mines on the Monongahela Ry. alone not in operation on Aug. 9 because of no cars. The poor car supply has retarded production throughout northern West

Virginia to such an extent recently that producers are aroused; two meetings of the directors of the Northern West Virginia Coal Operators' Association being held on Aug. 8 to see if something could not be done toward getting a better supply of cars. It was decided to keep hammering away at Railroad Administration and railroad officials until a better run of cars is furnished. Directors of the northern association will even employ extra help in taking care of the car supply problem, which has been extremely aggravating during the last month.

Though the embargo on coal to tide-water has been lifted there was a comparatively light run of coal to Curtis Bay and St. George during the week, attributable in large part to the curtailed car supply. Shipments of railroad fuel were much below the average and Lake shipments during the last few days of the week were almost insignificant. One of the principal events of the week ended Aug. 16 was the opening of the large mine of the New England Fuel and Transportation Co., on the Empire tract, in Monongalia County; this plant is on the Indian Creek branch of the Northern R. R., near Lowesville.

Developments during the first two weeks in August encouraged more active operations among the mines of Monongalia and Preston counties, every mine being in operation except where a shortage of cars has made that impossible. Shipments from Monongalia County have been greatly stimulated by an increased Canadian demand.

Huntington, W. Va.

C. & O. mines resume work on Aug. 16—Ten days' production lost for three big fields. Strike causes loss of 65 per cent. of capacity. Practically month of August will see little coal produced in C. & O. territory.

When shopmen of the Chesapeake & Ohio Ry., who had been on strike, returned to work Thursday night and Friday morning, Aug. 14 and 15, it made it possible to resume operations in the Logan, Big Sandy and Kanawha fields after a total suspension of traffic lasting for more than a week. Even though work was resumed in the shops it was impossible to have motive power ready for use before Aug. 18; consequently little or no coal was produced in any of the fields mentioned before Aug. 18 so that the suspension of operations meant the loss of ten days production in practically three large fields. As the output of coal in the 300 mines supplied by the C. & O., in which 40,000 miners are employed, has been averaging about 2,250,000 tons of coal a month, the strike cut off the production of about 750,000 tons of coal. It prevented the production of approximately 280,000 tons in the Logan field alone beside seriously aggravating a pre-existing labor shortage of 25 per cent. By the time the shopmen had returned to work food was beginning to run quite low in the Guyandotte Valley which was almost completely marooned as a result of the strike. Losses sustained during the week ended Aug. 9, amounting to 278,000 tons, afford an idea of just how production was crippled, the total production loss being 84,000 tons in excess of the previous week. The loss directly attributable to the strike was 259,000 tons or 65 per cent. of capacity. During the week ended Aug. 9, mines were operated only for three days or for a total of only 1801 hours, the loss in time being 4193 hours. Production dropped with a dull thud from 197,000 tons to 119,000 tons as compared with 222,000 tons for the corresponding week of 1918. It will be several weeks before the mines of the Big Sandy are able to work under anything like favorable conditions so that the month of August will be virtually a loss as far as the production of coal is concerned. Striking shopmen would not have returned to work when they did had not the saner element among them finally dominated the radicals who advocated an indefinite strike.

The C. & O. coal freight movement for July, 1919, made it plain as to the extent to which a scarcity of cars had affected shipments. Few Government cars had been assigned to service by the end of July, although allocated to such service.

Williamson, W. Va.

Pocahontas actually gains in production in face of demoralized transportation. Kenova-Thacker output far below same period of last year—Production 68 per cent.—Demand for this coal growing.

In spite of demoralized transportation conditions, the output in the Pocahontas

field showed a slight gain, the total production for the week ended Aug. 2 and the week ended Aug. 9 being 282,000 tons and 283,000 tons, respectively, even though the car shortage loss was increased from 131,708 tons to 140,000 tons; the loss in working time from a car shortage was 1285 hours and this was mainly responsible for cutting down the working time to the extent of about 300 hours. Despite such a reduction in working time, more coal was produced and the tonnage loss was not so large, amounting to 148,000 tons instead of 159,000 tons for the week ended Aug. 2. Thus it will be seen that a car shortage was responsible for the loss of all but 8000 tons, the remaining 8000-ton loss being equally distributed between a labor shortage and mine disability. The labor shortage loss was reduced from 10,000 to 4,000 tons. There was a slight increase in coke production but it was still far below normal, the tons of coal coked being 6600 as against 5900 for the previous week. With no coal being produced in the New River region, the demand for Pocahontas coal was extremely urgent.

Though the output in the Kenova-Thacker district for the week ended Aug. 9—115,000 tons—was far below the output of 164,000 tons for the same period of last year, there was a decrease in the amount of coal mined as compared with the previous week of only about 2000 tons. While there was rather a marked increase—1800 tons—in the loss from car shortage which shot upward from 21,000 tons to 39,000 tons (or from 12 to 21 per cent.) nevertheless the loss from other sources was reduced so that the total increase in the production loss was only the difference between 51,000 and 53,000 tons. During the week ended Aug. 2 the mines had an output of 72 per cent. That was decreased to 63 per cent. during the week ended Aug. 9. The principal loss in working time was of course due to a somewhat limited car supply. The demand for Kenova-Thacker coal is gradually growing in volume and under favorable conditions production will be materially stimulated.

Nanaimo, B. C.

Move to have duty on fuel oil into Canada removed—To force down price of coal—Opposed by coal men. Annual contest in first-aid and mine-rescue work on Sept. 1.

On his return from Ottawa recently, Senator Planta made some statements with reference to the efforts which had been made at the capital to have the duty on fuel oil into Canada removed. He said that strong pressure has been brought to bear on the Government to this end; petitions having been forwarded with the support of the Vancouver Board of Trade and other Vancouver organizations. The reason advanced for the move being to force down the price of coal. Senator Planta thought that it was the big interests who were behind the movement and he referred in this connection to the Canadian Pacific R. R., the Canadian Pacific Steamship Co. and the Manufacturers' Association. The Minister of Finance, it is stated, had been strongly impressed with the advisability of taking this action, but it was so strongly opposed by representatives of the coal mining constituencies that no action was taken.

The Vancouver Island Mine Safety Association will hold its annual contest in first-aid and mine-rescue work on Sept. 1. at Nanaimo, B. C. Seven or eight teams are entered representing the various mines of the Nanaimo district and there will be teams from coal-producing sections of the mainland as far east as the Crows Nest Pass. The Provincial Government has made a substantial grant this year to assist the association in providing an attractive programme and interest is high among those who will compete. They have been in training for months and it is expected that the meet will be the most successful held in the Province for the last four or five years.

Victoria, B. C.

Esquimalt & Nanaimo Ry. belt coal is decided to be property of the Province. Claim of H. W. Treat valid. Large coal beds established—Are they available for commercial development?

The Privy Council has upheld the judgment of Canadian courts to the effect that the coal lying under the foreshore within the Esquimalt & Nanaimo Ry. belt is the property of the Province. The E. & N. Ry., it will be recalled, laid claim not only

to all the coal within the railway belt proper, but all that might be found under foreshore lands. Their title was contested by H. W. Treat, of Seattle, Wash., who had staked some foreshore near Chemainus and was proceeding under provincial license to do some boring with the intention of developing the coal should it prove to be in sufficient quantity. When the railway questioned his right and took the matter to the courts, Mr. Treat was successful. The case, however, was appealed but now with the Privy Council on record, there is no further question of the validity of his claim.

Following the publication of this decision, mining men are interested in the development of the coal leases at Oyster Bay and other points in the neighborhood of Chemainus. Mr. Treat is reported to have drilled through coal at Chemainus in two places. It has been established that there are large coal beds in this section but whether they are available for commercial development remains to be established. It is understood that Mr. Treat and his associates propose to continue with their work, being confident that this foreshore coal can be mined at a profit.

PENNSYLVANIA

Anthracite

Scranton—The Ronna Coal Co. will rebuild its coal washery with extensions and installation of new equipment at a reported cost of \$100,000. W. P. Jennings, of Dunmore, is general manager of this company.

Hazleton—There is a report of a 3-ft. seam of coal being struck by diamond drillers on property of the Lehigh & Wilkes-Barre Coal Co., south of this place. It is said the company will develop the tract.

Harrisburg—Seward E. Button, Chief of the Department of Mines, and his deputy, Frank Hall, have been holding a series of conferences with mine inspectors in various sections of the state, looking into safety matters. Special attention has also been given to the labor and car situations.

Wilkes-Barre—The Anthracite Forest Protective Association, in which an acreage of about 100,000 is represented, is conducting an advertising campaign in the hard coal region to get every landowner on the membership rolls. The association, which numbers coal companies, water companies, rod and gun clubs and individual citizens in its membership, hopes ultimately to reduce forest fires throughout the whole region to a minimum and to encourage the reforestation of what are now waste lands. Part of its existing equipment is in the shape of observation towers, whereby all the land from Wilkes-Barre to Pottsville can be viewed and fires spotted before they gain much headway.

Bituminous

Canonsburg—The Canonsburg Gas Coal Co., of this place (in Washington County), and with general offices at Pittsburgh, plans to open up a new plant at Tylerdale, Penn. Some 700 acres of coal will be developed by a 250-ft. shaft. Modern equipment is to be installed throughout. Holmes A. Davis, of Washington, Penn., is president, and J. H. Hillman of Pittsburgh is vice president of the company.

Ebensburg—E. M. Burns and W. H. Smith, of this place, in Cambria County, are said to have purchased the coal lands and plant of the Nelson Coal Co., in West Carroll Township, Cambria County, for \$80,000. The company has a modern tippie and two mine openings. Improvements contemplated by the new owners, it is said, will double the present capacity of the plant.

Robertsdale—It is rumored that the New York Edison Co. has solved the problem of its fuel supply by purchasing outright the East Broad Top R.R. running from Mount Union to Robertsdale, Shade Gap and Jacobs, together with the coal mines along the line of the road in Huntingdon, Bedford and Fulton counties. It is said the consideration was \$5,250,000. The coal mines were opened up and the railroad built in 1873.

Harrisburg—The executive committee of the Bituminous Mine Inspectors' Association, of Pennsylvania, held a special meeting at this place, on Aug. 8. The meeting followed the vetoing by Governor Sprout of the bill passed by the last Legislature increasing the salaries of mine inspectors \$500 per year, and much disappointment was expressed by those in attendance, due to the fact that salaries of mine inspectors have not been advanced since before the commencement of war. Thomas K. Adams is president.

Pittsburgh—Richard W. Gardner, commissioner of the Pittsburgh Coal Operators' Association, was notified recently by Van H. Manning, director of the national Bureau of Mines, that hereafter no license will be required for the purchase, possession or sale of explosives or ingredients. Until a condition of peace is reached, however, licenses must be had for the manufacture of explosives and the exportation and importation of such products.

The sum of \$1,800,000 has been allotted by Congress for the improvement of the Allegheny River, and half of this amount is to be spent in the erection of dam No. 4 at Natrona. This will extend the slack water 7½ miles, permitting a pool stage a short distance above the Kiskiminetas River. It is expected that it will take two seasons to finish the work. It will open up a means to ship millions of tons of coal which is being developed along and adjacent to the river. A system calling for eight dams is under way for the Allegheny. Plans have been about finished for dam No. 5 and work on the plans for dams Nos. 6, 7 and 8 is well under way. No. 8 will be 61 miles above the mouth of the river.

Brownsville—The Snowdon Coke Co., of Pittsburgh, has contracted with the Wood Equipment Co., of Chicago, for the installation of a 28-car revolving dump at its mine at Linn Station, Fayette County, near here. A full trip of 28 cars will be dumped at one operation. This is said to be the longest revolving dump attempted as yet; the longest one in use being an 18-car dump at the Lamont plant of the H. C. Frick Coke Co., at Lamont, Fayette County, Penn., installed some seven years ago. The wood, drop-bottom mine cars now in use at the Snowdon plant will be replaced with solid steel-body cars to be furnished by the Koppel Industrial Car and Equipment Co., of Koppel, Penn. It is expected that the installation, which is to be made without interrupting the operation of the mine, will be completed about the first of the next year.

WEST VIRGINIA

Fairmont—Government cars are apparently now being assigned to coal carrying service after considerable pressure has been brought to bear, about 1500 of such cars having been observed in empty trains passing through this city. The number of such cars allotted for use in the Fairmont region so far has been rather small.

Princeton, W. Va.—The building of a branch line by the Virginian Railway from Maben on its main line into the Milam Fork district of Wyoming county, will make possible the development of a considerable acreage of Pocahontas coal hitherto untouched, it being estimated that there are at least 100,000 acres of land in that section underlain with coal of merchantable thickness. The presence of engineers at Maben leads to the belief that the building of 27 miles of branch line will soon be undertaken.

Thirty thousand acres in the Milam Fork area are owned by the Wyoming-Pocahontas Land Company, headed by Andrew Squires, in which Cleveland capitalists are largely interested.

Ten thousand acres of coal land in the same section are under lease by the Raleigh-Wyoming Coal Co., it is stated, this company having been organized only a few months ago with a capital of \$500,000. To develop the 10,000 acres will represent an outlay of approximately \$5,000,000 it is said.

KENTUCKY

Hazard—There are now seven operating companies on Lotts Creek and the Indian Head Coal Co., will start shipping shortly, which will make the eighth operation; a ninth is in prospect. The Hardy-Burlingham Coal Co., is planning to increase production to 5,000 tons, it is said.

OHIO

Columbus—Coal operators in Columbus and central Ohio are opposed to the plan of President Wilson, as announced in his recent message to Congress, to bring the coal industry again under the control of the Federal Government. A canvass of the situation shows that coal producers and distributors do not want Federal control again and believe that if price fixing is brought about, the agency fixing the price should take into account the fact that practically every mining proposition lost money during the early months of the present year and that higher prices for the latter part of the year are necessary for operators to make a fair profit on the years' operations.

Corning—Considerable activity in coal mining circles has sprung up recently in the Corning field, which was one of the important mining sections of the Hocking Valley field 25 years ago. The Central Power Co., has secured a franchise to furnish electrical current to the village of Corning and with the coming of the high power line several mines will reopen. The Sunday Creek Coal Co., has made contracts with the power company to pump out mines No. 5, 9, 11 and 13 which have been idle since 1903. When these mines are pumped out they will be leased. One of the mines (No. 9) has been leased to Monsarrat Bros., of Columbus; operators will soon start up operations. New tipples will be erected and electrical equipment installed. Mine No. 8 of the Sunday Creek Co., has been leased to Harry Kelly, of Nelsonville, who is organizing a company to make the necessary improvements before starting operations. This mine has been idle since 1903. Mines Nos. 11 and 13 which are adjoining will be combined into one operation.

ILLINOIS

Edwardsville—Miners employed by the Donk Bros. Coal and Coke Co. have voted to name the new Donk Mine here "Thermal."

Braidwood—Negotiations are in progress for the consolidation of the Oswald-Young mine, long identified with Braidwood (Will County) business interests, and the Skinner Brothers & Co. mine. It is planned to retain Messrs. Young and Oswald to manage the mines and to operate both properties as heretofore.

Zeigler—Aug. 1, the first commercial coal was hoisted through the main shaft of mine No. 2 of the Bell & Zoller Mining Co. here. Work was started over a year ago on the shaft. It is one of the large mines of the county. The reservoir, covering over ten acres, was recently finished. This mine will have particularly large storage tracks for empties.

West Frankfort—The Old Ben Coal Corporation is equipping all its mines with dust-barrier apparatus which is intended to localize explosions. The apparatus includes V-shaped troughs containing slate dust; the troughs are so placed in entries as to be easily overturned in case of an explosion. The Bureau of Mines carried on extensive experiments and succeeded in localizing explosions by dust barriers. This action of the Old Ben Corporation followed an investigation of the matter at the Pittsburgh Experiment Station last year. The corporation has installed a grinding plant and, it is understood, it will furnish dust for other companies equipping their mines with such protection.

ALABAMA

Birmingham—The new byproduct coke ovens of the Sloss-Sheffield Steel and Iron Co., at North Birmingham are expected to be in operation about Nov. 1. The cost of the plant was estimated at about \$6,000,000.

S. L. Yerkes, representing the Alabama Coal Operators' Association, has in conjunction with the Harlan County Coal Operators' Association, Hazard Coal Operators' Exchange and Southern Appalachian Coal Operators' Association, filed a petition with Director General Hines, of the Railroad Administration, protesting against the operations of the Eastern Car Pool. This pool is said to be greatly depleting the supply of coal cars being furnished the southern region of the Railroad Administration territory; it is asserted that many mines throughout the southern coal fields are suffering serious delays due to the shortage of cars caused by the manipulations of the pool.

MISSOURI

Kansas City—An executive meeting of the Southwestern Interstate Coal Operators' Association was held on Aug. 14 to make arrangements to deal with conditions that were expected to result from the strike scheduled for Aug. 18 in Kansas and Missouri union mines. It is said that the operators have no idea of attempting to effect a settlement now but will arrange to obtain coal from other sources to supply the demand in this territory.

Personals

H. D. Thompson, former state mine examiner for Williamson and Johnson counties, has been appointed State Inspector for Madison and Bond counties.

C. G. Wood has been appointed superintendent of the New River mines, at Kilsyth, succeeding J. K. Hobaugh, resigned. For the last six years Mr. Wood has been located at Tamroy.

Edward Brewer has resigned as district mine inspector for the eighth district, at Charleston, to accept the post as manager of the Wet Branch Coal Co. operating at Dry Branch, W. Va.

O. J. Jenkins has succeeded W. C. Thompson as superintendent of the Macdonald plant of the New River Co. Mr. Jenkins up until the time of his appointment, was mine foreman at Macdonald.

W. C. Thompson has been transferred from Macdonald where he was the superintendent of the plant of the New River Co. to the Cranberry No. 1 mine of the company where he succeeds Thomas Mackey.

George Carter, of Hazleton, Penn., who was chief inspector for the Fuel Administration here during the war, has been appointed to a similar position for the Harwood Electric Co., Cranberry Creek Coal Co., Harwood Coal Co. and Alliance Coal Company.

R. S. Weiner has been appointed district manager for the Sullivan Machinery Co., at El Paso, Texas, succeeding Don M. Sutor. The latter has been transferred to the company's St. Louis office as district manager for Missouri, eastern Texas, Oklahoma, Kansas, Western Kentucky and western Tennessee.

Peter McLinden, the new mine inspector for the Eighth West Virginia inspection district of Fairmont, has just been appointed by W. J. Heatherman, Chief of the West Virginia Department of Mines. Mr. McLinden has been for several years one of the assistant chemists and inspectors of the Consolidation Coal Co. He succeeds Edward Brewer, resigned. Mr. McLinden's headquarters will be at Charleston.

James E. Strong, for the past several years general superintendent of mines for the Sloss-Sheffield Steel & Iron Co. resigned his position Aug. 1. Mr. Strong has been identified with the coal mining industry for the past twenty-five years in an executive capacity in this district; he has not announced his future plans. His position with the Sloss company is being temporarily filled by **Howard Thomas** assistant general superintendent.

Obituary

Oswald Jones, age sixty-seven years, died at his home in Marion, Ill. on July 31, after a long illness. Previous to ten years ago he was a resident of Scranton, Penn. He came to Marion as a representative of the Scranton Big Muddy Coal Co. and sunk and equipped the Scranton mine east of Marion and was general manager of it for several years. He leaves a widow and five children.

Trade Catalogs

Industrial Transportation. Issued by the Bicycle Manufacturers' Association; Joseph Goodman, secretary, 36 Pearl St., Hartford, Conn. Pp. 24; 7 1/2 x 10 in.; illustrated. Includes communications from various corporations relative to accommodations for bicycles at their plants; excellent illustrations accompany.

"Pennsylvania" Hammer Crushers, Bradford Breakers and Single Roll Crushers. Pennsylvania Crusher Co., Philadelphia, Penn. Bulletins 1004, 1006 and 4005, respectively. Pp. 4, 4 and 2, respectively; 8 1/2 x 11 1/2 in.; illustrated. These bulletins are included in a binder. The apparatus is illustrated and described.

Industrial News

Sharples, W. Va.—The Boone County Coal Corp., with headquarters in the Bullitt Building, Philadelphia, Penn., has recently increased its capital from \$3,000,000 to \$12,000,000, to provide for general business expansion. William J. Clothier is president.

Du Bois, Penn.—The Diamond Drilling and Exploration Co. has been organized by local capitalists to take over the diamond drill contracting department of the Birdsboro Steel Foundry and Machine Co., of Birdsboro, Penn. C. C. Hover is president and general manager of the new corporation.

Scranton, Penn.—Staple & Bell, Inc., has awarded final contracts to Wheeler & Railey, Dorranceton, for the erection of the proposed coal breaker and plant at its property at West Nanticoke. The project is estimated to cost about \$100,000. Frank B. Davenport Coal Exchange Building, Wilkes-Barre, is engineer for the company.

Cleveland, Ohio.—The Fate-Root-Heath Co., of Plymouth, Ohio, has been incorporated with a capital stock of \$1,000,000 and has taken over the property and business of the J. D. Fate Co. and the Root-Heath Manufacturing Co.; the plants of the two companies adjoin. It is stated that fully \$150,000 will be expended in new construction and equipment, all contracts having been placed and equipment purchased.

Huntington, W. Va.—The Harlania Coal Co. has been formed with a capital of \$300,000, for the purpose of developing a tract of coal at Colcord, W. Va. Huntington business men compose the company for the most part, it having been organized by the following men: George H. Weise, Julius Friedman, Emanuel Biern, C. Egri, and C. H. Egri. By the end of the year it is believed the railroad will be completed and the mine ready for operation.

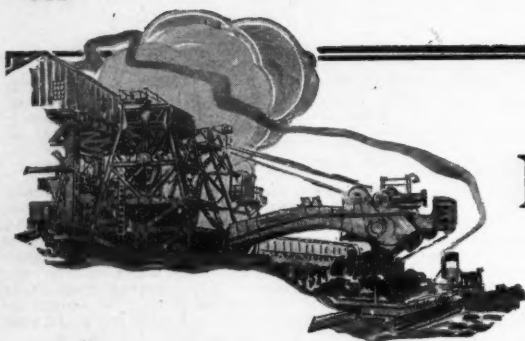
Beckley, W. Va.—Among the improvements being made by the Winding Gulf Colliery Co. at Winding Gulf, W. Va., are the installation of a water tube boiler and a 250-K.W. unit at its power house. The company is also putting up about 25 new miners' houses and is building an addition to its store and office building. Furthermore, a 20,000-gal. mechanical gravity system to purify the water in use at the plant being installed. The company is under the management of George Wolfe.

Providence, Penn.—The Hudson Coal Co., is working on plans for a new breaker on the present site of Marvine No. 2 breaker, now used as a washery, where all coal mined by the company in the Green Ridge and Providence sections would be prepared for market. The new breaker, will cost about \$500,000 and will be built of steel. The plan will care for all the coal mined at Von Storch, Dickson and Marvine collieries; some of the breakers, at these plants have been in operation for the past fifty years.

Webster Station, W. Va.—The Holly Coal and Timber Co. has been organized by Cleveland business men, with a capital stock of \$1,500,000. The new company plans to establish operations on Laurel Creek in Braxton County, near Palmer. The company proposes to develop its resources along the Coal and Coke R.R. and the Baltimore & Ohio R.R. Cleveland capitalists who are back of the new company include Peter Mueller, William Muth, Dr. Carper, E. Schmitz, Charles Ihrig and Alphonso Schmitz. Address Braxton Central.

Wilmerding, Penn.—The Westinghouse Air Brake Home Building Co. has been organized, with a capital of \$1,000,000, for the purpose of transacting all business relative to the real estate and dwellings which have been transferred to this company by the Westinghouse Air Brake Co. It includes the ownership of over 400 houses and considerable vacant property in Wilmerding and vicinity. The officials of the new organization are: A. L. Humphrey, chairman of board of directors; C. A. Rowan, president; S. R. Gittens, manager; H. C. Tewer, secretary. Since the Westinghouse company built its first houses for employees in 1890 there has never been an increase in rents and it is said that the new company will carry out the same policy.

Philadelphia, Penn.—According to the Anthracite Bureau of Information production of the three domestic sizes of anthracite, nut, stove and egg, has been maintained so satisfactorily during the four months beginning with April that the markets have received more than 15 per cent. in excess of the total for the corresponding period in 1916, which was the last normal year in the American coal business, and which was taken by the United States Fuel Administration as the basic year upon which all anthracite allotments were determined. For the four months ended July 31, the total shipments of the three sizes mentioned have been in excess of 13,440,000 tons, while in the corresponding period of 1916 the total shipments were but slightly over 11,600,000 tons, leaving a difference of nearly 2,000,000 tons in favor of this coal year to date. Under a continuance of existing conditions there is no reason to believe that the anthracite industry will not maintain a good production record during the late summer and fall.



MARKET DEPARTMENT

EDITED BY ALEX MOSS



Weekly Review

Prices on Bituminous Generally Firmer and in Some Cases Higher—Railroad Embargoes Shift the Flow of Coal—Labor Unrest Everywhere—Car Shortage Hampering Production in Many Fields.

FROM several points come reports of increasing prices on bituminous coal and everywhere the market on this commodity appears firm. Those consumers who have not yet laid in their winter's supply, those who have held off in the hope of a decline, have apparently been deceived in their expectations. So far as may now be discerned, the market shows no sign of a retrograde movement.

During the past week embargoes were in force upon many of the railroads, particularly the carriers of New England, as well as some roads traversing southern Illinois and Indiana. These had the effect of stopping the movement of coal in the territory affected and diverting its flow to new channels. Thus the coal from Pennsylvania normally moving to New England all-rail flowed to such points as Philadelphia, Baltimore and New York. Instead of producing a glut in these places, this extra supply was absorbed without

serious difficulty. No great inconvenience was reported in New England territory as arising from this diversion.

Labor unrest is everywhere; the coal industry is neither immune from nor has it a monopoly upon this movement. All great wars leave in their wake a period of instability and industrial confusion. In the present instance this condition has developed much more quickly than has usually been the case in the past. After the Civil War it was well into the '70's before labor troubles became acute. This country is perhaps at least as free from difficulties of this kind as are other nations. Scarcity and high prices of fuel in European ports—the direct result of strikes in England—have caused many ocean liners to bunker on this side for the round trip. This practice did much during the past week to alleviate the possible congestion that might have existed at various Middle Atlantic ports as a result of the shunting of coal to

them from New England destinations.

Car shortage is becoming more acute. Practically all fields are experiencing this difficulty to a greater or less extent, and more production probably is now being lost from this cause than at any other time during the present calendar year. This condition is particularly acute in southern Illinois, although Ohio, Kentucky, West Virginia and Pennsylvania fields are by no means immune.

During the recent past one market influence has largely tended to offset or nullify the effects of another. The strikes of workmen along the Great Lakes and in New England released coal to be absorbed somewhere else. The small supply to certain inland manufacturing districts such as Michigan was counterbalanced by small demand because of labor difficulty in the factories. If market factors all tended in one direction the net result might quite conceivably be decidedly different.

WEEKLY COAL PRODUCTION

The production of bituminous coal decreased from 9,947,000 net tons in the week of Aug. 2, to 9,407,000 tons the week of Aug. 9. Transportation difficulties arising from the various railroad employees' strikes of that week are the cause to which the decline is attributed. The market is generally improving, but the demand is yet mainly for the better grades of coal, the mines producing the lower grades still reporting time lost because of no demand. The average daily rate of production in the week of Aug. 9 was 1,568,000 tons, compared with more than 2,000,000 tons a year ago when the market was strong enough to absorb any coal produced.

The production of anthracite after a slight slump in the last half of July increased to 1,870,000 net tons in the week of Aug. 9, a figure exceeded this year only in the weeks of Jan. 25 and July 12, a figure, however, 9 per cent below the output in the corresponding week of last year.

The records of the four weeks ended Aug. 2 show an average of about 4 days' operation per week, compared with 5 days a week in the corresponding period, last summer. Lack of market is responsible for one of the two days a week being lost, this year, and other causes, principally car shortage, for the other day. A year ago losses on account of car shortage averaged less than half a day a week, over the country.

In a number of eastern fields, notably the Pittsburgh district, Westmoreland, and neighboring fields, Somerset, the southern West Virginia fields, both high and low volatile, and the Hazard and Harlan fields in eastern Kentucky and Virginia, lack of market has ceased to be a factor limiting production. Labor trouble in Kansas and Missouri was responsible for about 20

per cent. loss of operating time, the last half of July.

The production of beehive coke continues to increase, the estimates for the week of Aug. 9 placing the output at 383,000 tons, compared with 379,000 tons the preceding week. The gain was almost entirely in Pennsylvania, the other states, except Colorado and New Mexico, recording decreases.

Lake cargo loading in the week of Aug. 2 was 660,000 tons, a considerable decrease below the loading in the previous week (893,000), and the lowest this year since the first week in May at the beginning of the season. The total Lake shipments to date are now less than 1,300,000 tons ahead of last year, and the lead gained early in the season is diminishing for the weekly loadings are now decreasing whereas last year at this time they had just begun to increase.

Atlantic Seaboard

BOSTON

Embargoes lifted. No reaction as yet. Another week expected to give better line on market. Gas coals higher in price. Active demand at New York and Baltimore piers. Hampton Roads coals firm. Light stocks in hands of distributors at this end. Reading tugs still tied up. Public does not realize small tonnages now in hands of retailers.

Bituminous—The Boston & Maine embargo against commercial coal was lifted Aug. 15, after just a week's operation. The Boston & Albany followed promptly, and it

is understood the New Haven will also raise the ban shortly. New England will then be open once more to the movement of coal all-rail. The restriction did not last long enough to have any effect on spot prices, so far as can be judged at this writing. Stocks are ample, certainly for the present, and no cases of distress were heard during the week. The four weeks previous showed a heavier movement all-rail than for several months previously, and more than likely the week just passed would have shown receipts of equal volume except for the embargoes. The coal that headed elsewhere will now doubtless be replaced to a large extent, although some contractors will be likely to consider the period of embargo as practically a cancellation of what weekly deliveries would otherwise have been made. By and large, less harm was done than the trade feared, and now all hands are looking forward to a good fall market.

One result of the embargo is the almost total lack of offerings for spot shipment. Apparently most of the shippers felt that the tie-up was of uncertain duration and that meanwhile other territory would absorb all the free coal being mined from day to day. This turned out to be the case, for except in scattered instances consignments were easily furnished for all the New England coal that had to be diverted at the various scales and prices showed no softening in any direction. Without doubt the market will open this week on the same basis that obtained when the embargo was declared, and prices quoted a week ago will be operative now.

It is difficult to determine now whether or not there will be a further hardening of prices during the next fortnight. It will take at least the present week to get a line on car-supply and longer still to measure the full result of the railway shopmen's

walk-out in various sections. The fact that no wage settlement has yet been made, and that further turmoil is possible should induce steam-users here to attempt even more buying than during the past month. There are few now who have not at least 60 days' supply, although it is doubtful if those consumers who are depending upon Hampton Roads coals have really much in excess of that. There is a feeling in the trade that a considerable number of buyers are relying implicitly on contracts and that any one of a number of possible happenings will deprive them to quite an extent of the supply expected. Should heavy export demand continue as it now promises there is bound to be a more or less irregular movement of the smokeless coals to tide-water and consequent delay in loading bottoms. The recent wage advances granted in the Pocahontas and New River districts and now being added to contracts will also have some bearing on the volume of these coals to be shipped on New England contracts.

High volatiles, especially adapted for producing gas, are especially firm in price. So large a proportion of this tonnage is sold on contract that the few shippers who reserve coal for the spot market are now beginning to reap a harvest. Certain grades from Westmoreland County are now commanding a full dollar a ton more than the price at which contracts were offered early in the season. Delays at Norfolk and Newport News are causing some of the gas companies to look for acceptable coals outside their contracts and a continued spot demand is counted on.

Renewed buying for the bunker trade has developed at Baltimore and New York the past week, and as a result the eligible grades are being quoted at prices a shade firmer. Inquiries from coastwise buyers, partly because of the rail embargo, have been more active, and while the tonnages involved are small there is some difficulty in arranging for prompt shipments. At Baltimore even Pool 11 coal is being sold at around \$5.20 per gross ton f.o.b. vessel, and this is notably firmer than a few weeks ago.

At Hampton Roads the price situation is firm. All the agencies are following closely developments in the export market, and every cargo they can spare from coastwise contracts is being applied in that direction. Dispatch varies from week to week with the movement of coal, but practically all the time there is an accumulation of boats waiting at the piers. Railroad difficulties around Chicago have had a tendency to increase somewhat the volume of coal for the piers, and it is possible that some spot fuel may again be offered in this market. Up to this time there have been no quotations here that were at all comparable with the prices prevailing offshore, and should there be any offering now it would be instructive to see what price could be had.

Distributors here who re-handle the smokeless coals for shipment inland have only light stocks on hand. In no case are they forwarding coal to consumers in advance of their obligations, so far as has been heard, and the few scattering inquiries that developed during the embargo disclosed how little coal had been taken on during May, June and July. Recent figures show that this trade has materially diminished this season as compared with 1918. A year ago a large number of steamers had been furnished to help supply New England, but this year the great bulk of tonnage for this territory has been arranged for all-rail shipment. In some cases factors here are re-handling 65 to 70 per cent less coal for inland points than was the case a year ago. To that extent have been changed the usual channels of supply through the largely increased cost of sending coal by water.

Current quotations on bituminous at wholesale range about as follows:

	Clearfields	Cambrins and Somersets
F. o. b. mines, net tons.	\$2.60@3.10	\$3.00@3.60
F. o. b. Philadelphia, gross tons.	4.79@5.35	5.20@5.80
F. o. b. New York, gross tons.	5.10@5.70	5.50@6.20
Alongside Boston (water coal), gross tons.	6.85@7.35	7.10@7.85

Georges Creek is quoted at \$3.70 per net ton, f. o. b. mines.

Pocahontas and New River are quoted at \$6.25 @ \$6.60 per gross ton f. o. b. Norfolk and Newport News, Va., in response to export demand. There continue practically no sales for coastwise shipment.

Anthracite—The situation on hard coal continues without material change. It was

rumored during the week that the wage difficulty with the crews of Reading tugs was in process of adjustment, but at this writing there has been no sailing from Port Richmond (Philadelphia) since Aug. 5. At last reports there were tied up at the loading piers 8 tugs and 44 barges, nearly all the latter being loaded. This will prove a serious setback to the large number of retail dealers all along the New England coast who rely almost entirely for their supply on the movement of this fleet. All-rail receipts will be light for ten days or so because of the recent embargo, and within a short time people returning from their holidays will begin clamoring for coal.

It is perhaps as well that the public does not realize how small are the stocks now in the hands of the dealers. There have been so many interruptions to movement and production is so small that the trade is beginning to wonder what will be the outcome.

Steam sizes are now practically without market in this territory. Low prices are quoted f.o.b. mines on barley especially, but freights are so high to every point that there is no inducement to buy.

NEW YORK

Demand for stove and egg is strong. Consumers of small steam sizes are buying mostly for immediate consumption. Rail embargoes to New England tended to cause accumulation at New York piers, but bunkering demand tended to relieve this. Business in general active.

Anthracite—The demand for stove and egg sizes shows no let up. So heavy is this demand that the principal producers are now recrushing broken coal so that they may be able to in part at least, satiate the call for these two much favored sizes. As a consequence of this treatment of broken at the mines, supplies of this size at tide-water are so low certain shippers are finding it difficult to secure sufficient quantities to apply on their contracts.

The retail trade throughout Greater New York is about as active as one could expect during a summer month. Retail dealers are not able to create any surplus except on chestnut and pea.

Considerable is heard in the trade about premium prices being paid on stove and egg. In some sections 85 cents per ton is freely paid for straight shipments of stove. In other sections, premiums reaching as high as \$1.50 are offered.

The strike of the railroad shopmen in New England brought about embargoes on shipments of coal to practically all of this territory. This gave dealers in these states much worry, and up until the moment the strikers were ordered back to work, many of the tidewater dealers in position to receive coal at tidewater ports for interior distribution, were concerned in trying to make arrangements for water transportation in case the railroad embargoes were further extended. These embargoes were in full effect up to the first of this week.

The situation in the steam coals is not materially changed. Buckwheat is active with some shippers, while others find it sluggish. So far, consumers are not concerned about storing rice or barley, and purchases of these coals are for the most part for immediate consumption. The two latter sizes are in large accumulation, except coals of the higher grades.

Quotations for company white ash coals, per gross ton at the mines and f.o.b. New York tidewater lower ports, during August, follow:

	Mine	Tidewater
Broken.	\$5.95	\$7.80
Egg.	6.25	8.10
Stove.	6.50	8.35
Chestnut.	6.60	8.45
Pea.	5.20	6.95
Buckwheat.	3.40	5.15
Rice.	2.75	4.50
Barley.	2.25	4.00

Bituminous—Notwithstanding the embargoes against shipment of coal by rail into New England on account of the railway shopmen's strike, which embargo has been in effect for more than ten days, the distribution of mine output has not been disturbed to the extent that prices have suffered.

Naturally, with New England territory shut off from rail deliveries, one could expect an accumulation at the tidewater ports, and that coal would be so free at the New York piers, especially, that sellers would be making concessions in order to move it and escape demurrage. Such, however, has not been the case, the high-grade

coals being taken freely at former prices. The only weakness has been on coals of inferior grade.

The New England railroad strike has greatly accelerated the movement of waterborne coal into that territory. Transportation lines running from New York piers to Sound points have found their business greatly increased.

There has been also an increased call for Pennsylvania coals for export, and as a result some of the high-grade low volatile varieties have advanced in prices from 15 to 25 cents. Bunker inquiry has been much stronger. Strikes at English ports, the scarcity of coal over there, and its high price, has caused some shipowners to bunker at American ports for the round trip.

Coal operators take sharp issue with Railroad Director General Hine's statement issued on Saturday, denying that there is a shortage of coal cars. Some of them say that while the statement on its face may be true—that there may be ample coal cars—yet it is an evident truth that these cars are not being placed at the mines so that a full day's output can be attained for six days a week.

High-grade coals are short of actual requirements despite the New England embargoes, and with the re-opening of this territory coal men expect the full output of the cheaper grades to be well taken.

Prices quoted for the various tidewater pools show an increase, the quotations ranging about as follows:

Pools 1 and 71.	\$5.70 @ \$5.85
Pool 9.	5.60 @ 5.75
Pool 10.	5.50 @ 5.60
Pool 11.	5.15 @ 5.35
Pool 18.	4.75 @ 4.85

There were not many changes in the current quotations for the various grades of coal at the mines. They range as follows:

	Spot
South Fork (best).	\$3.25 @ \$3.50
Cambrina (best).	3.00 @ 3.25
Cambrina (ordinary).	2.65 @ 2.90
Clearfield (best).	3.00 @ 3.25
Clearfield (ordinary).	2.70 @ 3.00
Reynoldsville.	2.70 @ 2.90
Quemahoning.	3.10 @ 3.25
Somerset (best).	3.00 @ 3.25
Somerset (poor).	2.65 @ 2.75
Western Maryland.	2.50 @ 2.75
Fairmont.	2.10 @ 2.35
Latrobe.	2.60 @ 2.65
Greensburg.	2.50 @ 2.60
Westmoreland, 1 in.	2.75 @ 2.90
Westmoreland run-of-mine.	2.50 @ 2.60

PHILADELPHIA

Anthracite production keeps up. Better receipts locally. Rail strike helps local retailers temporarily. Possibility of price-fixing board. Egg badly wanted. Stove still scarce, but chestnut plentiful. Pea moving better. Slow movement at tide. Buckwheat only active steam size. Bituminous in more plentiful supply. Rail strike makes better coals freer. Prices hold firm.

Anthracite—With the production in mid-August well up to normal there is a general feeling that the fuel situation will be successfully met. There are many things that might happen to prevent this, such as car and labor shortages, but even at that a good tonnage is now in the cellars of consumers. The local retailers are still calling for coal, but it is mostly for egg and stove. A fair supply of all sizes came into the market this week and in more than one instance a dealer asked to have his orders on chestnut and pea coal held.

The labor troubles affecting New England have not reached the railroads in this territory as yet, and with embargoes issued by all the roads entering the above territory a considerable tonnage came in this direction. Even at that it was not heavy, and the report is that the companies took advantage of the situation to increase shipments to the West, both all-rail and via the Lake ports.

The difficulty in the local situation is that the rail strike might become so serious as to seriously interrupt mining, for it would only take a single week with production at the present rate to swamp the local market if no other outlet was to be had. It is believed that the individual shippers are particularly anxious under present conditions as to whether they can maintain their present margin of prices above the company circular. It will be remembered that this differential runs all the way from 45c. to \$1.60 a ton and should coal suddenly become plentiful it

only stands to reason that the retailer will hold up the fuel that costs him the most.

The retailers are actually hoping that rail trouble will be adjusted promptly so as to remove the necessity of their holding orders. They realize that they will need all the coal they can get this winter at any price and do not want to be placed in the position where they might cut off some of their sources of supply.

All dealers continue to be fairly busy. Without exception they have much undelivered tonnage on their books, principally of egg and stove sizes. Egg has by no means become free and they are becoming just a trifle impatient now that summer is fast slipping away. It would take only a little tonnage to fill the local demand, even though it is larger than normal, and if the big companies should start shipping it would only take two weeks at the most before all orders for egg would be filled. Stove is another question, as the demand for this size is going to be strong until next spring. Not only do the dealers have a plenitude of orders on their books for this size, but 75 per cent of all the new business they receive is for stove. Chestnut orders are well taken care of, and it is the usual thing now to see accumulations of this size in the yards. Pea is picking up slightly and the dealers seem to be sending out a little more each week lately, although this has little effect on their storage stocks, as these are constantly being added to.

There has been some slight difficulty in moving coal at the tide piers on account of labor. A larger tonnage than usual was shipped to the piers on account of the checking of rail movement by embargoes. Vessels were far from able to load the coal promptly and much of it has accumulated in the storage piles.

In the steam trade buckwheat is the only active size and seems to be displaying greater activity, although not to the point of absorbing the entire production. While there is a fair demand for rice, as a number of large plants using it are speeding up stocking, yet it is still necessary to place a heavy tonnage of this size, as well as barley, in the storage yards. There has been no change in prices.

Bituminous. For the past week there has been a rather good supply of soft coal in this market. This was the natural effect of the freight embargo on all roads entering New England. Such good coals as were offered were quickly taken, as there is a steady call for these grades. However, this did not appear to affect the movement of other coals, as there seems to be a general tendency now to get fuel, especially by the plants that are in position to store heavily.

The small buyer, too, seems at last to be awake, the upward movement of prices during the past several weeks probably having impressed him at last with the notion that there can be no falling in the prices until next spring. Some moderate buyers who have hung off awaiting a more favorable price market are seeking contract protection, but are finding scant opportunity to get contracts and are compelled to buy at the market.

There has been an improvement in labor conditions at tide, but the one great drawback continues to be the lack of bottoms and in many instances owners of vessels chafe at fixed rates of freight under which they are still compelled to operate. There is a heavy demand for fuel from Italy, with all sorts of pressure being brought to bear to secure tonnage, but with the continuing scarcity of ships it is not seen how the situation is to be met.

Owing to the more plentiful supply of coal coming into the local markets prices held fairly firm during the week, although a few slight increases were recorded. Prices per net ton at mines rule about as follows:

Georges Creek Big Vein.....	\$3.25@3.40
South Fork Miller Vein.....	3.25@3.40
Clearfield (ordinary).....	3.00@3.10
Somerset (ordinary).....	2.90@3.05
Fairmont lump.....	2.90@3.00
Fairmont mine-run.....	2.70@2.80
Fairmont slack.....	2.20@2.35
Fairmont lump (ordinary).....	2.55@2.65
Fairmont mine-run (ordinary).....	2.35@2.45
Fairmont slack (ordinary).....	2.25@2.35

BALTIMORE

Export market the liveliest in years. Gas coals strengthen. Local call for steam fuels steady, with prices still tightening. Hard coal men now cleaning up last of summer orders.

Bituminous.—There can be no doubt but that the export movement is the feature of the present fuel situation here, as the market is the most lively in years. Under the call gas coals have stiffened greatly, and three-quarter is now generally commanding around \$3 mine basis to the trade. Practically no coal is to be picked up at tide, the only way to assure cargoes being to ship into the pools. Despite a long-shoremen's strike which prevented vessel movement for two days and caused a brief embargo by the Baltimore & Ohio against Curtis Bay, the first ten days of August saw a loading here on coal ships of more than 70,000 tons.

There is now every promise that August will exceed the month of July in export coal handled here—a total of 258,496 tons having been dumped into coal-bearing ships during last month. The local call for steam coals continues strong, although it lacks the excitement of some two weeks ago when consumers began to rush orders for coals for storage, fearing a general railroad strike would catch them short of reserves. There is still a steady demand and all supplies are readily assimilated. Little of the best grade of coal is offering and the few sales of pool 71 are close to the \$4 line.

Pools 9 and 10 are recording some sales at from \$3.50 to \$3.75 to the trade, while pools 11 and 18 are good generally at from \$3 to \$3.25, thus setting for the most part a \$3 or better market. Because the tonnage coming through is readily taken up the purchasing is on a less discriminatory scale than is normally the case. The movement from the mines keeps improving and while there is some talk of car shortage it is not general. Cumberland reports the movement of loaded cars as being from one-quarter to one-third improved over what it was two weeks ago.

Anthracite.—Supplies of hard coal are easing up, and the principal shortage exists now only in stove and chestnut sizes. The trade is now working on the last of the summer orders and will probably clean these up early in September, as the run here from the mines is steadily improving. The proportion of company coal coming in is also growing, as was promised for August, and this is quite pleasing to retailers in the face of a 75c premium generally on independent coals, with a broker's commission added in some cases.

The advance of 25c a ton on Aug. 1 may be the last for a time, unless there is a freight-rate increase, as there is some talk of not making another jump on Sept. 1. The trade plans to be guided in this by the margin of profit as placed by the

National Fuel Administration for Baltimore during the war. It is now traveling on a \$2.50 a ton margin of profit basis as a whole. In view of this conservative stand the trade is not unduly excited by talk of including an inquiry into the cost of domestic coal in Baltimore in the scope of a state high-cost-of-living investigation now in progress.

BIRMINGHAM

Strike of railroad shopmen seriously cripples production and movement of coal. Many mines idle entire week on account of the embargo by railroads. Demand somewhat improved and orders in hand ample to take care of output under present operating conditions.

During the past week coal production was seriously curtailed by the failure of the railroads to furnish equipment for loading. Practically all the mines in the Walker County field served by the Frisco Lines were idle the entire week, while the Southern, Louisville & Nashville and other coal carriers could only furnish a 50 to 60 per cent car supply. However, embargoes and other limitations in connection with the strike of the railroad shopmen have now been taken off, but there is still a pronounced car shortage. While sales of steam fuel have not come up to expectations the past week, there is a fair volume of orders and contracts being taken right along, and it is stated that more business is now in hand at the mines than can be taken care of under present operating difficulties. Prices on mine-run coal range from \$2.45 to \$2.90, prepared sizes \$2.75 to \$3.86, per net ton mines.

Domestic lump and egg are scarce and in good demand. Cahaba and Black Creek are quoted at \$4.15, Acmar big seam \$3.30, Carbon Hill \$3.45, these being schedule prices. Sales of small spot lots are made at from \$4 to \$5 per net ton mines, but there is little free coal to be found in the domestic sizes.

Lake Markets

PITTSBURGH

Reports of fancy prices on small lots. General market slightly higher. More labor unrest, as in other industries. Car shortages pronounced, and restricting output.

Some coal operators are circulating reports of high prices received, attempting to give the market the appearance of greater strength than it possesses, as sales at fancy prices are exceptional, and involve only small lots. Conservative operators decry this policy for it not only misrepresents the situation, but is likely to react unfavorably upon the coal industry, which has already been charged in uninformed quarters with profiteering.

Car shortages have been pronounced the past week, and at nearly all mines have taken the place of lack of orders as the immediate cause of restricted output. There has been a heavier volume of buying and contract requirements are somewhat heavy, so that all or nearly all the operators desire to increase their production, but on account of car shortage there is scarcely any increase in actual shipments.

Labor is showing somewhat more restlessness, but this is now coming to be recognized as a feature of labor in all industries and the coal industry is beginning to realize that it has no monopoly of the condition.

Coal and Coke Securities

NEW YORK STOCK EXCHANGE CLOSING QUOTATIONS, AUG. 18, 1919

STOCKS		BID		BONDS		BID	
	Ticker Abv.		Asked				Asked
American Coal Co., of Allegheny.....	(ACL)	45	.....	Cahaba Coal, 1st Gtd. 6s, 1922.....		96½	.....
Burns Brothers, Com.....	(BB)	135	140	Clearfield Bituminous Coal, 1st 4s, Ser. A, 1940.....		75½	.....
Burns Brothers, Pfd.....	(BB)	99½	118½	Colorado Fuel & Iron, Gen. 5s, 1943.....		90½	92
Central Coal & Coke, Com.....	(CK)	55	.....	Colorado Indus. 1st Mtg. & Col. Tr. 5s, 1934.....		79	79½
Central Coal & Coke, Pfd.....	(CK)	63	.....	Consolidation Coal of Maryland, 1st Ref. 5s, 1950.....		85½	86
Colorado Fuel & Iron, Com.....	(CF)	40½	41½	Jefferson & Clearfield Coal & Iron, Sec. Mort. 5s, 1926.....		96	.....
Colorado Fuel & Iron, Pfd.....	(CF)	.....	125	Lehigh Valley Coal, 1st Gtd. 5s, 1933.....		99½	100
Consolidation Coal of Maryland.....	(CGM)	75	.....	Lehigh Valley Coal, Gtd. Int. Red. to 4%, 1913.....		74	.....
Elk Horn Coal, Com.....	(EH)	36	36½	Lehigh Val. Coal & Nav. Con. S. F., 4s, Ser. A, 1954.....		90	.....
Elk Horn Coal, Pfd.....	(EH)	42	47	Pleasant Valley Coal, 1st S. F., 5s, 1928.....		80½	83½
Island Creek Coal, Com.....	(ICR)	39	.....	Pocahontas Coal & Coke, Joint 4s, 1941.....		.....	87
Island Creek Coal, Pfd.....	(ICR)	75	.....	Pocahontas Con. Collieries, 1st S. F. 5s, 1957.....		93	.....
Jefferson & Clearfield Coal & Iron, Pfd.....	(JF)	63	.....	Roch. & Pitts. Coal & Ir., Helvetia, Pur. Money 5s, 1946.....		89½	80½
New Central Coal of West Va.....	(NCC)	5	.....	St. L., Rocky Mt. & Pac. Stamped 5s, 1955.....		89½	.....
Pittsburgh Coal, Com.....	(PC)	63	64	Tenn. Coal, Iron & R.R., Gen. 5s, 1951.....		87	70
Pittsburgh Coal, Pfd.....	(PC)	93	96½	Utah Fuel, 1st Sinking Fund 5s, 1931.....		55	70
Pond Creek Coal.....	(PD)	17½	17½	Victor Fuel, 1st Mtg. Sinking Fund 5s, 1953.....		84	85½
Virginia Iron, Coal & Coke.....	(VK)	60	64	Virginia Iron, Coal & Coke 1st 5s, 1949.....		84	.....

Coal production is now at between 80 and 90 per cent of full output based on full time work of men on payrolls, and at 60 to 70 per cent based on full ratings of mines. Nearly all the operators would be producing more coal if they had full supplies of cars and labor.

The market generally is quotable about 10c higher on slack and 5c higher on steam mine-run, though occasionally small lots go at higher prices than here quoted. The following approximate prices obtain: Steam slack, \$1.90@2.10; gas slack, \$2.10@2.35; steam mine-run, \$2.35@2.50; gas mine-run, \$2.50@2.75; 4-in. gas, \$2.80@3 per net ton at mine, Pittsburgh district.

BUFFALO

Car shortage increasing. Bituminous slowly firming up. No boom looked for now. Canada buying better. Anthracite more plentiful locally. Lake trade active.

Bituminous—The trade grows slowly stronger. Nobody reports anything like a boom and in fact all idea of a rushing market immediately has now been dropped. If there is eagerness developed on the part of the consumer to buy it will not happen before cool weather sets in and there is no indication of it now. At the rate of improvement now making the early winter demand ought to be fully normal and if the war and its violent consequences are out of the way business will settle down and progress will be satisfactory.

Some special activity is shown by Youghiogheny gas coal, but it is not thought best to make a quotation of it apart from regular Pittsburgh. Shippers are not eager to push up prices at present, lest the Government take a hand in the business again. Quotations remain at \$4.55 for Allegheny Valley sizes, \$4.80 for Pittsburgh and No. 8 lump, \$4.65 for Pittsburgh three-quarter, \$4.20 for mine run and \$3.80 for slack, with smokeless at \$4.60 and Pennsylvania smithing at \$5.70.

Anthracite—The trade is active, with demand in excess of supply and likely to remain so till winter is over. The surplus will be small, if any, and it may turn out that there will not be enough to carry consumers through. Shippers do not all think there is a shortage that cannot be met, but the figures are not reassuring. With proper handling the supply ought to be sufficient.

Of late the city trade has received coal quite liberally, but it goes out as fast as it comes in. Much more has already been delivered to residences than is common at this time of the year, but unfortunately the amount in storage cannot be computed, as it is not known how much was carried over. A mild winter will make the problem easy.

Lake shipments are liberal, being for the week 122,200 net tons, of which 42,400 tons cleared for Chicago, 34,600 tons for Duluth-Superior, 14,300 tons for Sheboygan, 9,000 tons for Milwaukee, 7,200 tons for Green Bay, 6,000 tons for Menominee, 3,200 tons for Fort William, 3,000 tons for Racine and 2,500 tons for Calcutta.

Freight rates are 60 cents to Chicago, 57½ cents to Racine, 47½ cents to Milwaukee and 42½ cents to Duluth, Fort William, Sheboygan and Green Bay.

The August prices of anthracite are as follows:

	F.o.b. Cars, Gross Ton	At Curb, Net Ton
Grate.....	\$8.55	\$10.20
Egg.....	8.75	10.60
Stove.....	8.95	10.80
Chestnut.....	9.00	10.90
Pea.....	7.40	9.25
Buckwheat.....	5.70	7.75

TORONTO

Stove coal practically off the market. Shipment of anthracite slow and price advanced. No serious shortage feared. Demand for bituminous still below normal.

Stove coal is practically off the market, such limited supplies as are received being used by the dealers to fill long delayed orders. Some firms are refusing to accept any more orders for anthracite until they can overtake deliveries, and others are taking orders only for egg and nut subject to price when delivered.

Shipments from the mine are arriving slowly in about equal volume to the orders coming in, and prices have advanced \$1 per ton. Dealers are generally of the

opinion that there will be no serious shortage during the winter as many consumers have already laid in supplies. The yards are well stocked with bituminous, the demand for which though gradually increasing remains considerably below normal.

Retail:

Anthracite, egg, stove, nut and grate.....	\$12.50
Pea.....	11.00
Bituminous steam.....	8.00
Slack.....	7.00
Domestic lump.....	10.00
Cannel.....	11.50
Wholesale f.o.b. cars at destination:	
Three-quarter lump.....	6.25
Slack.....	5.15

CLEVELAND

Coal is decidedly tighter in northern Ohio. Because of a strike, Lake shipments have decreased one-third. Labor troubles are keeping some large steam-coal users idle, but dwindling car supplies at the mines have more than offset decreased demand from these sources. Prices on practically every grade have advanced during the week.

Bituminous—This market this week presents the unusual aspect of being firmer while production and demand are off. Restive labor and shrinking car supplies have cut the output of southern and eastern Ohio mines probably 15 per cent, bringing their average now not much over 50 per cent. At the same time the strike of upper Lake dockmen has cut 50 per cent into vessel fuel and 30 per cent into cargo coal demands. Strikes, keeping idle several of the largest steam-coal users in the Cleveland district, have temporarily shut off these avenues of need.

The result of this muddled situation is that steam coal appears scarcer than at any time this season. Operators could sell 40 per cent more were the tonnage at their disposal. Desire to stock is more in evidence now than at any time in the past year. Surplus stocks of slack at the mines are coming into this district as fast as the carriers and their limited supply of cars can bring them. Despite agitation over high costs and threats of federal investigations, the Cleveland coal market presents a solid front of strength. Ten to 20c a ton has been tacked onto all coal prices by dealers, and further advances are looked for in another week or ten days.

Anthracite and Pocahontas—Retail dealers are getting not more than 15 per cent of their desired supplies of these grades and in most cases 10 per cent is nearer the maximum. In the meanwhile, demand shows no letup, and receipts are in yards scarcely over night, as a rule. On these grades, too, dealers have chalked up quotations, and some plan further increases as they have not passed on to the consumer all of the stated monthly increases.

Lake Trade—Upper Lake dockmen are returning to work at some of the coal docks at the head of the Great Lakes, but shipments still are far behind and are probably not much over 700,000 tons a week, compared with 850,000 tons before the strike and 1,000,000 to 1,100,000 tons a week in a normal year. Much coal still is on the docks at the head of the Lakes and the strike is proving of less harm to the trade than might generally be thought. With most of the Great Lake freighters temporarily tied up, fuel-coal demands have been cut virtually in half. Were all conditions on the Lakes and at upper Lake ports normal, car supply at Lake Erie ports is such that shipments would be drastically curtailed.

Prices of coal per net ton delivered in Cleveland are as follows:

Anthracite:	
Egg.....	\$11.35@11.80
Chestnut.....	11.65@11.90
Grate.....	11.45@11.75
Stove.....	11.55@11.80
Pocahontas:	
Forked.....	9.50
Lump.....	8.75@9.00
Mine-run.....	7.50
Domestic Bituminous:	
West Virginia splint.....	8.00@8.25
No. 8 Pittsburgh.....	6.60@6.90
Massillon lump.....	7.60@7.95
Steam coal:	
No. 6 slack.....	4.50@4.70
No. 8 slack.....	5.00@5.30
Youghiogheny slack.....	5.20@5.50
No. 8, 4-in.....	5.65@5.95
No. 6 mine-run.....	4.70@4.95
No. 8 mine-run.....	5.10@5.30

DETROIT

Curtailment of Detroit's coal supply due to the railroad labor troubles shows a mildly stimulative effect on buyers of bituminous.

Bituminous—Complacency of the buyers of steam coal who have been withholding their orders has been somewhat shaken, jobbers say, by the walkout of railroad employees and the subsequent developments in their relation to transportation of coal. The embargo placed on coal shipments by the Chesapeake & Ohio R.R. evidently gave material for thought to some of the backward consumers, as jobbers report a slight increase in inquiries from that division of the market.

Detroit jobbers say that nearly 95 per cent of the bituminous coal supply of the city comes from West Virginia and Kentucky and that nearly half of the shipments are handled over the Chesapeake & Ohio. That road's embargo consequently occasioned considerable anxiety because of its direct effect in cutting off coal supply and because of the disorganization likely to follow the interruption of transportation operations.

The volume of business coming to jobbers from buyers of steam coal is still pronounced smaller than it should be, and some of the industrial plants are yet delaying the placing of orders. Jobbers say there is little coal on tracks and that shipments are largely restricted to fuel sent directly to consumers. West Virginia 4-in. lump is quoted at \$3.25 to \$3.50, with 2-in. lump at \$3, mine run at \$2.25 to \$2.50, and slack at \$1.85 to \$1.90. For Hocking domestic lump the quotation is \$2.75 and for Pittsburgh No. 8 three-quarter lump \$2.50. Mine run from Ohio districts averages about \$2, and slack from \$1.50 to \$1.85. It is difficult to obtain smokeless and for mine run \$2.75 to \$3 is asked.

Anthracite—Detroit is not receiving much anthracite, jobbers assert. The retail dealers are complaining that their orders are not being filled promptly and that troublesome delays are experienced in the delivery of shipments from the mines. While most of the retailers have some anthracite in stock, the supply would be quickly cleaned out with an active buying movement. Some of the retailers are said to be refusing to accept orders for anthracite, owing to the uncertainty of obtaining stock to fill them.

Lake Trade—Shipments over the Lake routes have been greatly curtailed in the last few weeks, and the greater proportion of Lake freighters are now idle, pending settlement of labor troubles at the head of the Lakes.

CINCINNATI

Strike of railroad shopmen demoralized local trade. Many mines shut down. No prospect of immediate improvement.

The strike of railroad shopmen, while it lasted only a week, practically demoralized the local coal situation. The mines in the Kentucky and West Virginia fields where not enough cars could be had to keep the miners busy had to shut down. A few of the mines where cars were available opened this week, but the majority will not resume operations until next week. Three hundred mines were closed down in the Kanawha, New River and Logan districts.

Local dealers are advocating that the consumers get together and place large orders so that deliveries can be made more promptly. They point out that delivery of coal, ordered in this manner, will be more certain. Coal now selling here at \$6 and \$7 a ton will be much higher, the dealers say, if deliveries are not made until October.

Dealers point to the fact that there are large quantities of coal near this city, but on account of labor conditions and inadequate transportation facilities, deliveries are doubtful.

The car shortage in the West Virginia and Kentucky fields so far this month has been very acute. Some operators report that they have had on an average sufficient cars to run 4½ days out of 15 days of the month. The prospects are not bright for an immediate remedy of the conditions.

LOUISVILLE

Car shortage becoming even more serious. Prices showing steady advancement because of short production and active demand. Southern market buying freely.

Because of lax methods of repairing cars with curtailed shop forces together with added stress as a result of the recent shopmen's strikes cars are in even worse re-

pair, and the shortage is more serious than formerly. Mines are operating two to three days a week in western and southeastern Kentucky. Mines in the pooling zone of eastern Kentucky are in slightly better shape.

Prices are showing steady advancement because of the low production and the fact that, with block coal, demand is greater than supply, while small production is resulting in only a minimum quantity of low-priced spot coal being on the market. Some few lots of low-priced mine-run were offered last week when strikes made it impossible to ship on certain orders. Block coal is strong, and buyers in the field are forcing up prices, operators placing high prices as production for the most part is sold and they cannot handle the business. The low prices on steam grades and the reduced production resulting from car shortage have made operating costs higher, and to meet these the price of block coal is being raised. Block coal has sold at as high as \$5 at the mines during the past week, with the general market at \$4.50 to \$4.75 per ton.

Operators are somewhat disturbed over President Wilson's statement relative to profiteering, and discussion of re-establishment of coal-trade regulation. Producers, jobbers and retailers are generally opposed to further Federal control, but point out that profits today are not as good as they were at this time last year. The entire blame, however, is laid on the Railroad Administration in its failure to supply cars and keep cars in repair. With an adequate car supply it is held that prices would be much lower.

The jobber is not making any money as he is only handling mine-run, 4 in. steam and a little nut and slack. The operators are not offering any block coal through jobbers as buyers are in the field with ready cash looking for this grade.

Retailers in Louisville are thoroughly dissatisfied and disgusted. Block coal in eastern Kentucky is quoted at \$4.50 a ton, and carries a freight rate and war tax of \$1.60, making this coal cost \$6.10 laid down in Louisville. Such coal is retailing at \$7 a ton, leaving a margin of 90 cents for delivery, overhead expenses, profit, etc., whereas the margin should be \$2, and the retail price \$8.10 a ton. Within the past four months there has been an increase from \$2.85 a ton to \$4.50 or \$4.75 a ton, resulting in an actual increase per ton of \$1.75 to \$2 on block coal. Competition with river coal from West Virginia, and with one retail concern owned by an operator, has been largely responsible for the low prices quoted at retail. This will eventually result in retailers being forced to make a big increase, which will result in a general howl from the public.

The principal demand for coal at this time is coming from the South where prices are strong, and where cotton manufacturing interests are laying in a three to four months supply, and where retailers are buying well. There is also some coal going to the Lakes and Northwest.

Prices at mines are as follows:

	Eastern Kentucky	Western Kentucky
Block.....	\$4.25@4.75	\$2.50
Mine-run.....	2.40@2.85	2.25@2.40
Nut and slack.....	2.10@2.85	1.75@2.10
Pea and slack.....		1.25@1.50

Coke

CONNELLVILLE

Furnace coke slightly improved, foundry coke much stronger. Some contract negotiations for furnace coke. Contract prices withdrawn on foundry coke.

The market has improved a trifle as to prices for prompt, in furnace grade on account of absorption of part of the stocks, and in foundry grade on account of heavy demand coupled with shortage of labor for the special preparation required in making and shipping foundry coke.

There has been a moderate volume of buying of spot and prompt furnace coke, apparently by furnaces that were not receiving full shipments under contracts, though it is likely some furnaces have been adding to their stocks. There is always an incentive to furnaces to pick up odd lots when they can be had at so much under contract prices.

The usual asking price for spot and prompt furnace coke continues to be \$4, concessions being made when actual business develops, but the extreme concession now is about 10c, against 20c easily obtainable ten days ago. There are some negotiations for furnace coke for delivery over the remainder of the year, by idle furnaces that cannot yet set a definite date for their blowing in, and these negotiations lag as the furnaces want to buy at not far from the going market on spot coke while operators want a much higher price as they expect the spot market to be very high in the late months of the year.

Foundry coke has undergone a farther stiffening. There are some indifferent brands to be had at \$5 for spot or prompt shipment, but it is harder to pick up such coke now at \$5 than it was two or three months ago to get it at \$4.50. The best known brands, which recently were going freely at \$5.25 and \$5.50, are now higher, several being set at \$6 as minimum, and some sales have been put through at that level. Contract prices are no longer quoted for foundry coke. Operators find much difficulty in securing the extra labor necessary for producing and shipping foundry coke, and do not wish to increase their obligations. The market is quotable as follows: Spot furnace, \$3.90@4; contract furnace, \$4.25@4.50; spot and prompt foundry, \$5@6 per net ton at ovens.

The "Courier" reports production in the Connellsville and Lower Connellsville region in the week ended Aug. 9 at 222,170 tons, an increase of 13,070 tons. Production has thus increased about 125,000 tons weekly since the low point last May.

Buffalo—The trade is fairly good, though the operations of the furnaces are not what they were expected to be. Some of them are getting heavy amounts of iron ore on their docks, as it does not move, either to the fires or out by rail as had been planned. The receipts of ore by Lake are reduced considerably by the Lake Superior strikes, but only the vessels appear to care much about them. Coke prices are fairly strong at \$7.60 for 72-hr. foundry, \$7.25 for 48-hr. furnace, \$7 for off grades, with \$6.75 for domestic sizes and \$5.75 for breeze.

Middle West

MILWAUKEE

All soft coal, including Pocahontas, advanced 25c per ton. Demand for domestic grades of coal growing stronger. Stove and nut anthracite scarce. Lake receipts slowing up.

The entire soft-coal price list, including the different grades of Pocahontas were marked up 25c. per ton on Aug. 15. Anthracite and coke were left undisturbed. This makes the third raise in Pocahontas since the opening of the coal year. Lump, egg and nut are now held at \$10.75 and mine run at \$8.50. All other grades of bituminous coal have been advanced twice since May, and are now 50 cents higher than the opening schedule promulgated on the first of the month. In addition, the carrying-in charge has been increased from 50c per ton to 75c.

The demand for coal for domestic use is growing stronger as the season advances and consumers realize that nothing can be gained by postponing their orders. Dealers find it difficult to supply the demand for stove and nut anthracite, as there are a scarcity of these grades.

The demand for soft coal from industrial points in the interior is not in sufficient volume to keep the docks in such shape that they can take care of the inward flow of coal by Lake. Cargo receipts have slowed up somewhat of late, but the sum total is still ahead of the record of last year. Cargoes number 285 thus far, and embrace 467,000 tons of anthracite and 1,792,850 tons of bituminous coal, a gain of 163,498 tons of the former and 108,484 tons of the latter over last year.

ST. LOUIS

Practically the entire Standard and Mt. Olive fields on strike, with nearby districts affected. Car supply limited to one and two days a week where mines are working. Railroads in other districts embargoing against commercial loading. Some Indiana coal moving in, but no general demand for steam fuel, and situation is well in hand. Business in a general way is slow to buy.

Something like 75 mines are idle in the Standard and Mt. Olive fields on account of the Belleville leaders rebelling against

President Farrington and the officials of the United Mine Workers in Illinois. Various meetings have been held at different places and while the actual number of open rebels is in the minority, yet they manage to dominate the situation. The mines at Marissa and Coulterville, on the Illinois Central and all points on the Mobile & Ohio are not affected. These miners would not listen to the agitators from Belleville. As a matter of fact they were not given a hearing at several places. Toward the latter part of the week they were beginning to get some results at Sparta.

The trouble has spread to the Mt. Olive district and all the mines there are idle, as well as a few bordering on the edge of the Springfield district.

There was local trouble in the Franklin County field, but it was not on account of the Belleville affair. Perry County has not been affected by this strike either.

The few mines on the Illinois Central in the Standard field that are working are only getting about two or three days work a week on account of no cars. While many of the miners want to go to work the rebel element within their ranks prevents responding to the cause. As a matter of fact at many mines the fighting element stands guard to keep the other miners from going down. In the Mt. Olive district miners from Bend and other places to the number of 400 threatened the miners at Staunton and Mt. Olive if they went to work. The visiting strikers surrounded the mining properties and openly defied the miners who were not on strike to make any attempt to go underground.

The dissatisfied element is holding off for the meeting at Springfield on the 19th, at which time they hope to be able to carry out their program by ousting President Farrington and the other officials who insisted upon sticking by the agreement with the operators until the Cleveland meeting. Until then there is no prospect of the field going to work. As a matter of fact, there is some feeling here that if President Farrington carries out his intentions of excluding the rebels from membership that they will cause trouble anyway. It is the most serious problem that has confronted the operators for a long time, for there is no reasonable head to the uprising that seems to have any conception of the condition that has arisen.

St. Louis is not suffering, however, for coal from the Standard district. There is little doing in the industrial line and little call for coal, although a few carloads from Indiana have been brought in for emergency.

The few mines that are working are getting as high as \$3 for lump, \$2.50 for mine run and \$2 to \$2.25 for screenings.

The domestic demand is easy and the dealers are standing pat and waiting until things blow over. Only those who must have coal for immediate purposes are taking any.

The Standard situation represents to some extent the Mt. Olive conditions, only that there are no mines working in the Mt. Olive field, and the last ones to work were taking care of their regular trade at the regular price without any shadow of profiteering.

In Perry county the mines are working one day a week. In the Carterville field of Williamson and Franklin County the Old Ben mines were on strike over a request that the mine manager be discharged. This, however, has been settled and every mine in the field is at work as far as labor troubles are concerned. The Iron Mt. R.R. embargoed the mines against loading commercial coal. Most of the cars it furnishes must be loaded with company coal and it is only furnishing about two days supply a week.

The railroad tonnage has been exceptionally heavy on account of the threatened strike of the miners in Missouri, Kansas and Oklahoma, which will severely tax the western roads as to their fuel supply. The Burlington railroad is giving the best service in this field and the Chicago & Eastern Illinois next, with the Illinois Central and the Iron Mt. dragging along far in the rear.

Miners working for mines depending upon car supply on the Illinois Central and Iron Mt. are going to the mines on the other roads where they get steadier work. As a rule coal from this district has been selling at the regular circular price excepting in a few instances where mine run has gone up to as high as \$2.75, screenings to \$2.50, and lump and egg as high as \$3.25. This for the most part is off grade coal.

Some operators are charging jobbers more than the circular, thus forcing the jobbers to create higher prices.